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Fortnightly Review

Major Change

WITH swiftness unusual even in a Washington prepared for almost anything, a major change has been made in the personnel of the Civil Aeronautics Authority. It had been generally known that Edward J. Noble would resign from the Authority sometime this year. July was the expected date. What brought about the quick decision—and it all developed within 48 hours—is not of as much concern as is the character of the new chairman of the Authority and the new member the President appointed to fill the vacancy.

Bob Hinckley is a thinker, an analyst, a diplomat and an excellent administrator. He is a New Dealer of the Utah and far west school of thought. He can generally be termed an aviation expansionist both for scheduled air transportation and for private flying. He has been in aviation before; he has been a business man; he has flown a great deal as a passenger, and has a broad view of the potentialities that lie ahead for aviation. As former assistant administrator of WPA for 13 western states, he has first hand knowledge of airports and is a strong advocate of federal aid for airport construction. If Mr. Hinckley had been appointed originally as chairman of the CAA many of us in the east would have raised eyebrows and suspected a typical New Dealish move. Today the appointment occasions no surprise and it can be said that he enjoys the confidence of those in aviation who have met up with him. In many ways he is the direct antithesis of his predecessor. The response of his appointment has been unusually favorable.

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Radio Modernization Finished; Ultra-High Program Begins

HINCKLEY ASSUMES CAA CHAIRMANSHIP

Edward P. Warner's Confirmation as Fifth Member Expected Soon

Robert H. Hinckley has assumed the chairmanship of the Civil Aeronautics Authority following the resignation Apr. 12 of Edward J. Noble who had served in that capacity since the creation of the Authority last summer. Mr. Noble immediately assumed his duties as a special assistant to Secretary of Commerce Harry L. Hopkins.

Confirming the White House announcement of Apr. 12, President Roosevelt sent the name of Edward P. Warner to the Senate on Apr. 17 as the nominee to the vacant post on the five-man Authority. Early confirmation of his nomination is expected. One of the best known men in aviation and long prominent in both governmental and private aeronautical activities, Mr. Warner was strongly endorsed by manufacturing and air transport interests.

Mr. Noble's resignation had not been expected until summer. The selection of Mr. Hinckley as chairman and the nomination of Mr. Warner were received with approval and enthusiasm in Washington circles.

Jack Frye and Associates Buy Out Hertz and Lehman Interests in TWA

In one of the most sudden and dramatic coups in air transport history, Jack Frye, president of Transcontinental & Western Air, Inc., and a group not fully identified as this issue went to press, obtained full control of the company Apr. 22 by the purchase of all of the stock interests of John D. Hertz, Lehman Brothers and the Lehman Corp. Thus has one of the nation's oldest and best known airlines reverted to management control in the hands of the three men who started the company virtually on a shoestring some years ago—Jack Frye, Paul E. Richter, now executive vice-president, and Walter Hamilton, supt. of maintenance.

Coincident with the stock purchase, which became known Apr. 24, was the resignation of T. B. Wilson who only a few months ago was elected chairman of the board with full-time service. A number of board changes were expected within a few days.

Airways Director



Charles I. Stanton

Director of the Bureau of Federal Airways of the Civil Aeronautics Authority who reports completion of the radio modernization program.

Parallel New York- Chicago Airway Is Planned; 231 Ranges Now in Operation

THE \$5,000,000 radio modernization program launched a year and a half ago by the Bureau of Air Commerce was completed by the Civil Aeronautics Authority on Apr. 1, bringing the total number of radio ranges in the domestic United States to 231.

In addition another \$2,000,000 has been spent building approximately 1,500 miles of new airways, this program being completed May 1. Today the CAA is preparing to let contracts after July 1 for almost 2,000 more miles of airways complete with beacon lights and emergency landing fields, and is embarking upon a new program of experimentation with the ultra-high frequency radio stations which eventually may be in use throughout the country. One project will be the construction of a parallel New York-Chicago airway using ultra-high.

The entire program, one of the largest construction projects ever undertaken for any phase of aviation, has been under the direct supervision of Charles I. Stanton, former chief of the airways division and more recently director of the bureau of federal airways for the CAA.

The radio modernization program completed just a month ago included the construction of 80 SMRA vertical radiator simultaneous range stations, 30 loop type medium and low power range stations, 21 ultra-high frequency fan markers, and the modernization to simultaneous voice and range broadcast of 50 of the old-type vertical radiator stations.

In addition a new station was erected at Hartford, Conn.; three stations at Denver, Colo., Akron and Hayes Center, Neb., were built by United Air Lines and will be taken over later by the CAA, and 15 ultra-high frequency markers now being taken over from the State of Pennsylvania.

The airway building program brings the total airway mileage in the United States on which air navigation facilities are located to over 25,500 miles. Under this recent program just completed a new airway was built from Albany to

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Industry Acceptance

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April 20, 1939.

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Thanks a lot.

Yours very sincerely,
OLIVER L. PARKS,
President.

OLP:PW

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AMERICAN AVIATION
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Washington, D. C.

New Chairman



Robert H. Hinkley

Who succeeds Edward J. Noble as CAA Chairman.

Nominated to CAA



Edward P. Warner

Who was named by President Roosevelt to the Civil Aeronautics Authority.

Pan-American to Use U.S.-British Island of Canton in Pacific

Following an agreement between the U. S. and Great Britain for common use of Canton and Enderbury Islands in the south Pacific for international aviation and communication, Secretary of the Interior Harold Ickes on Apr. 13 signed a license permitting Pan American Airways to use Canton as an air base in its proposed U. S.-New Zealand service. Canton is 1,850 miles southwest of Hawaii.

Juan Trippe, president of Pan Am, was present at the signing and stated that Canton will replace Pago Pago as a stop, because the latter island is not suitable for operation with Boeing 314's. Pan Am is allowed to erect structural facilities on the island, including piers and ramps into the lagoon. Any subsequent relocation of the structures will be at PAA's expense.

Arrangements are incorporated in the license which would permit an air transport company satisfactory to Great Britain to use on an equal basis the facilities which are to be erected on Canton upon payment of a fair and reasonable rate to PAA, based upon the cost of installation and operation of such facilities.

The Department of State revealed that the U. S.-Great Britain agreement with regard to Canton and Enderbury incorporates the following provisions: the islands shall be available for communications and for use as airports for international aviation, but only civil aviation companies incorporated in the U. S. or in any part of the British Commonwealth of Nations shall be permitted to use them for purpose of scheduled air services; use of the islands for other aviation purposes shall be decided upon later by the governments; air facilities may be constructed by an American company if they are made available to a British company, and the joint control of the islands shall be for 50 years, or for a longer time if the parties seek modification.

Air Mindedness Grows

A survey of flying schools, plane manufacturers and colleges where pilot training is offered indicates that student flying and general interest are gaining in nearly every section of the U. S. Conducted by the Associated Press, the survey found that factories in Ohio, where 30% of the country's small planes are made, have noticed a small increase in sales in the wake of the government's program to college-train pilots. Aeronautics schools in Newark, Los Angeles, Brooklyn, Atlanta, Kansas City, Dayton, Chicago and St. Louis showed interest and enrollment increases ranging from 15 to 100% and sales from 15% upward.

Jack Frye

(Continued from page 1)

total TWA stock outstanding, hence the Lehman interests evidently decided to sell rather than to attempt to weather a costly proxy battle in which Frye apparently held the upper hand.

Predecessor companies were merged into National Air Transport in the early days. Later this became TWA. At one time the Pennsylvania Railroad held a substantial interest and General Motors maintained control until 1935. At that time G. M. sold its interests to Hertz and Lehman Brothers. In February, Hertz held 29,898 shares personally, having sold 2,000 shares that month.

Lehman Bros. issued a statement saying that they had sold all of their interests in TWA "in order to permit the management to increase its interest in the company." Jack Frye announced that "the members of the TWA management identified with this purchase have been actively engaged for 10 years in air transportation and in the development of this company. The acquisition of this interest is the realization of a hope which we have entertained for many years. We deeply appreciate the friendly cooperation of Lehman Bros. in working out the details of this purchase. Lehman Bros. have given valuable financial counsel to TWA in the past and will continue to act in this capacity."

Mass Instruction Plan Inaugurated by TWA, Crowell at Albuquerque

Albuquerque, N. M.—The first mass instruction of high school students in the fundamentals of aviation ever to be conducted in the U. S. got under way here on Apr. 18 with 2,000 boys and girls in attendance. The "ground school," which inaugurates the national air youth project to be conducted by TWA in cooperation with the Crowell Publishing Co., was to be followed by actual flight experience.

Government support of the plan is indicated by a letter from Clinton M. Hester, administrator of the CAA, to Thomas H. Beck, president of Crowell, on whose suggestion the project was undertaken. "I cannot commend too highly," Mr. Hester wrote, "the program for the education of the school children of Albuquerque with respect to air transportation. I feel that your organization and TWA are pioneering in a project which I trust others of the industry will enlarge upon because of its obvious benefits to the promotion of aviation."

J. W. Studebaker, commissioner of education, stated that "the idea of giving students information on aviation in general, and allowing them to inspect an airplane, its engines, instruments and controls, forms an excellent educational background to stimulate interest in aviation."

Preliminary instruction consisted of lectures by John Vale, TWA educational director, and a number of experienced pilots, together with the showing of motion pictures demonstrating various aspects of the aviation industry. Actual flights were to start in a Douglas DC-3, continuing for a week from Albuquerque's new \$1,000,000 municipal airport. Student passengers were to be equipped with earphones so that they might listen to the radio beam signals and the regular communication between pilot and ground station. An instructor was to be aboard to explain each operation to students.

While all high school children of Albuquerque will attend the "ground school," those making the actual flights were required to have written permission of their parents.

SEEK TO RESTORE LEAD Hineley Says Other Countries Have Taken Air Supremacy From U. S.

Ogden, Utah, Apr. 13—"While aviation was born here 35 years ago, other countries have militarized it to the point where they have taken supremacy away from America," said Robert H. Hineley, newly appointed Civil Aeronautics Authority chairman, in an interview here today. Hineley, a citizen of Ogden, said the CAA is seeking to restore the air lead to the U. S. "In a large measure it will be the responsibility of the CAA to restore that supremacy—in the American way," he pointed out.

"The American way means that we will not put emphasis where Germany, Italy and other countries have put it, but that we will develop aviation in this country by increasing our manpower and improving our machines for the pursuits of peace. It also means, none the less, that the development will be a resource that will help our country meet any kind of emergency."

Will Establish Port
Staten Island, N. Y., Apr. 15.—Plans for the establishment of an airport at Greenridge, a short distance from Richmond Field, have been announced by Charles Whitaker who has leased an 80-acre site. Rick Decker of Great Kills will be in charge of leveling off a plot between 1,600 and 2,000 feet square for the private flying field. Two hangars, with storage space for 30 planes, are planned.

Temptation

Current amusement in Washington is the moving of a number of Civil Aeronautics Authority divisions, including safety and planning, international, and records, to the Inter-Ocean Building on 9th St., directly across from the Gayety Theater which is straight burlesque and nothing else but. Another added nearby attraction is Col. Jimmy Lake's dancing academy, also long a capital institution of varying merits. No doubt somebody's going to find an excuse for having Ann Corio come across the street to a conference or something.

Calendar

- May 1-4—27th Annual Meeting, Chamber of Commerce of the United States, Washington, D. C.
- May 5—3d District Meeting, American Association of Airport Executives, Ft. Wayne, Ind.
- May 14—Cotton Carnival Air Show, Municipal Airport, Memphis.
- May 22-29—SAE World Automotive Engineering Congress, New York.
- May 25—Royal Aeronautical Society, Wilbur Wright Memorial Lecture, by G. W. Lewis, London.
- May 26-27—National Convention, Women's Aeronautical Association, Salt Lake City.
- May 28-29—Airport Managers' Association of Texas, Annual Conference, Galveston.
- May 31-June 2—Alabama State Air Tour Starting at Montgomery.
- June 3-4—9th Annual National Air Carnival, Birmingham, Ala.
- June 7-9—Technical Conference On Airport Construction, University of Michigan, Ann Arbor.
- June 8-11—SAE World Automotive Engineering Congress, San Francisco.
- June 12-14—Engineering & Maintenance Conference, Air Transport Assn., Los Angeles.
- June 15—Air Transport Assn., Meeting of Purchasing Committee, Los Angeles.
- June 17-19—Carolina Aero Club's Aircade to New York World's Fair.
- June 19—Annual Meeting, Florida Aviation Association, West Palm Beach.
- June 19—I. Ae. S. Session of AAAS Summer Meeting, Milwaukee.
- June 19-24—AAAS Summer Meeting, Milwaukee.
- June 21-24—20th Convention, U. S. Junior Chamber of Commerce, Tulsa.
- June 21-30—Florida Air Tour to New York World's Fair, beginning at Jacksonville.
- June 24-July 9—10th Annual National Soaring Contest, Elmira, N. Y.
- July 4—Airport Dedication, Madison, Wis.
- July 8-23—2d International Aeronautic Salon, Brussels, Belgium.
- July 10—ASME Popular Meeting on "Trans-Oceanic Flying," Golden Gate Exposition, San Francisco.
- July 16-23—Royal National Aeronautic Association Meet, Rimini, Italy.
- July 17-23—Cup of King Peter II of Yugoslavia, Fairley Airport, near London, England.
- July 29—30th Anniversary of Army Aviation.
- Aug. 20-21—Annual Air Show, Sheldon Aeronautics Club, Sheldon, Iowa.
- Sept. 2-4—National Air Races, Cleveland.
- Sept. 4—Aero Club of the Republic of Portland, International Competition for Gordon Bennett Cup, Warsaw.
- Sept. 4-8—ASME & Inst. Mech. Eng. of Great Britain, Meeting on Mechanical Problems of Modern Transport, New York.
- Sept. 11-15—International Congress of the Aeronautical Sciences, I. Ae. S., Columbia University, New York.
- Sept. 13-15—International Air Traffic Association Meeting, New York.
- Sept. 15—I. Ae. S. Dinner to Delegates to International Congress, New York.
- Sept. 16—International Aviation Day, New York World's Fair.
- Oct. 1—Deutsch Cup Race (speed), Etampes, France.
- Oct. 2-17—3d International Aeronautical Show, Milan, Italy.
- Oct. 5-7—SAE National Aircraft Production Meeting, Los Angeles.
- Oct. 16-20—National Safety Congress and Exposition, Atlantic City.
- Nov. 3-7—Annual Convention, Aeronautical Medical Association, Hollywood-by-the-Sea, Florida.
- Dec. 16—I. Ae. S. Wright Brothers Lecture, New York.

10th Anniversary



William Allan Patterson

President of United Air Lines Transport Corp., who was feted by company executives Apr. 20 on the occasion of his 10th anniversary with United and predecessor companies.

International Show, Races

Canceled Because of Unrest

St. Louis, Apr. 16—Thomas N. Dysart, president of the chamber of commerce, has announced that the international air races and show, planned for May 29-31 at Lambert-St. Louis Field, have been canceled "because of unsettled conditions." He said that in view of the present international situation, the presence of Army and Navy flying units could not be assured. Guarantors for \$60,000 had been obtained. George B. Logan, chairman of the St. Louis Air Committee, said the group hoped to hold the show in the future, having sponsored a similar affair two years ago.

ATC Conference Set

A joint industry-CAA conference on approved type certificates, to be held in May, will consider data to be presented to the CAA by Robert W. Ayer, newly appointed manager of the Aeronautical Chamber of Commerce technical department, who has been touring aircraft plants in the west. Consideration at the conference also will be given the aircraft airworthy requirements of Great Britain. It is believed the CAA later will send technical representatives to England in an attempt to settle variances.

New Mississippi Group

The first official meeting of the newly formed Mississippi Aviation Association was held recently at Jackson, it was announced by Carl Marshall of Bay St. Louis, president. The organization is the first ever set up in Mississippi with a single purpose to promote aviation development. Other officers are: L. D. Pepper, Jr., Greenwood; G. C. Rawls, McComb, and M. S. Camp, Starkville, vice-presidents, and Tom Lemly, Jr., Jackson, secy-treas.

William Rochford Resigns

William Rochford has resigned as assistant chief of the regulation and enforcement division of the Civil Aeronautics Authority and has returned to the lumber business. He is residing in Houston, Tex. A well known private pilot formerly active in aviation circles in the Twin Cities, Rochford joined the CAA to aid in the initial stages of simplifying regulations.

PATTERSON MARKS

10th YR. WITH UAL

Given Dinner by Executives; Has Guided Extensive Aeronautical Research Development

W. A. Patterson, president of United Air Lines Transport Corp. was honored by his management associates at a banquet in Chicago Apr. 20. On this date he completed 10 years of service with the company he now heads and its predecessor companies, having first been stationed in Seattle, Wash. with Pacific Air Transport, Inc.

In the course of his progress in aviation circles, he has held official positions with Varney Air Lines, Boeing Air Transport, National Air Transport, United Air Lines, Inc., United Airport Corp. of California and the Air Transport Association of America. His reputation as a "durable builder" in scheduled air transportation was fittingly climaxed recently when United Air Lines was awarded by the National Safety Council a certificate for conspicuous technical advancement for safety in air transportation. Among the projects prompting the award to United were such safety developments as suppression of aircraft radio static and perfecting of the terrain clearance indicator.

United has played an important part in such technical aviation projects as de-icing, automatic pilot, constant speed propeller and automatic mixture control. Two-way radio for voice, which made possible the transmission of over 100 words a minute instead of 20 words by code, was contributed to the advance of the industry by United ten years ago. United established the first airline research laboratories out of which has come many new ideas as well as new applications of old ideas. The fixed antenna, ignition shielding, constant level of speech amplifier, the remote radio receiver, airport localizers, time synchronization over an entire airline system and instrument landing are all important developments that owe much to United's research staff and Mr. Patterson's policy of extensive research.

Waters Succeeds Southee

The appointment of Maurice L. Waters as general manager of the Elmira Area Soaring Corp., Elmira, N. Y., has been announced by William L. McGrath, president of the board of directors. Mr. Waters succeeds Earl R. Southee who has been placed in charge of the New York area of the CAA's private flying division. As general manager, Mr. Waters will have charge of the Soaring Corp. activities in connection with the 10th annual National Soaring Contest to be held at Elmira from June 25 to July 9.

T. G. Harris Joins CAA

T. G. Harris, formerly assistant secretary and assistant treasurer of Braniff Airways, has joined the Civil Aeronautics Authority as principal analyst for the analysis and research section of the bureau of economic regulation.

Westwoods Admitted to Court

Howard Westwood, general counsel for the Air Transport Association of America, and Mrs. Westwood, were admitted to practice before the United States Supreme Court on Apr. 19. Mr. Westwood's offices are in Washington, D. C.

Joins Insurance Dept.

Kennard Jones has resigned as secretary of the aviation committee of the Spokane, Wash., chamber of commerce to become manager of the insurance department of Central Business Property Co. in Spokane. He has long been a leader in Northwest aviation.

Air Bills Moving in Congress But Few Have Reached Final Passage

By Kendall K. Hoyt,
Capitol Correspondent,
American Aviation Daily

A wide range of aviation bills started moving in Congress within the past few days, after several weeks of inaction which followed the first wave of enthusiasm for the air defense program at the start of the session. Only two of the major air bills have gone to the White House thus far and more than a dozen others remain to be completed. Prospect is, however, that the session will last well into July.

The two bills which have become laws are the Army and Navy national defense program authorizations which must be effectuated by later appropriations. The Army bill raises the Air Corps strength to a new limit of 6,000 planes, with a 12% profit limitation also applicable to the Navy, and a maximum appropriation of \$300,000,000. The Navy bill authorizes \$65,000,000 for air bases to encircle the United States and its possessions.

The regular Army supply bill, which has passed both Houses and is in conference, provides funds for 565 planes on the new expansion program plus 219 to complete the old 2,320 limit. But an augmentation bill to cover the bulk of the expansion is yet to be filed; likewise the Navy appropriation which will include aircraft construction. Whether the economy bloc will make a serious effort to trim the estimates may depend upon how serious the foreign situation appears at the time.

Air Mail

Other appropriations include the Post Office bill, now in conference. The domestic air mail fund was cut nearly \$1,000,000 below the budget estimate. The Second Deficiency Bill carries extra funds for CAA operations to June 30, plus an item covering a new laboratory for NACA at Sunnyvale, Cal. House cuts in both these deficiency items were restored by the Senate and prospects were thought favorable for Senate concurrence. An Autogiro appropriation is included. The Department of Agriculture supply bill, which passed the House, is in Senate committee with strong representations for restoration of the House clash in funds for improved aviation weather reporting services.

Pilot Training

The Lea bill, providing for a CAA program to train 15,000 civilian air pilots in qualified air schools, has passed the House. Senate hearings have been held on the companion McCarran measure. Witnesses urged that the program will avert the high-pressure training which otherwise would be required in event of an emergency and would result in heavy fatalities, judging from foreign experience.

A Naval air reserve will be created by a House-approved bill to commission Naval flying cadets on completion of their work at Pensacola and to place them on active duty service as reserve officers. This will provide trained men for the expanding air corps. Thus far, the Navy has been at a disadvantage as compared to the Army through lack of authority to commission its cadets.

Congressman Van Zandt has a bill to create a civilian air reserve for training of fliers who have a solo rating.

Airport Program

The \$125,000,000 airport program recommended by CAA for the next fiscal year has not yet been acted upon in Congress but plans are under consideration for the earmarking of works project funds for this purpose. With a

government reorganization order filed by the President to make extensive revisions in the present works and relief set-up, and with an investigation of WPA in progress in the House, definite plans can not yet be made. The reorganization order, incidentally, does not affect aviation directly although there have been unconfirmed rumors as to the later transfer of CAA to the Commerce Department.

Other Bills

Other aviation items in the Congressional hopper include a Senate-approved bill authorizing the procurement without advertising of aircraft parts, accessories, and instruments of a confidential nature. A Naval public works authorization, which passed the House, includes direction finders and air field improvements. The Senate has approved the establishment of a Coast Guard air base in Alaska and the procurement of 15 seaplanes. Sale of avia-

tion supplies by the War Department for planes operated by foreign aviation attachés has been authorized by the House.

CAA is permitted to use part of the Ft. Armistead Military Reservation, Baltimore, for a radio station through a bill passed by the Senate. But authorization for a CAA administration building and national headquarters at the Gravelly Point Airport near Washington was stricken from the pilot training bill. A resolution to create a standing Senate Committee on Civil Aviation has been favorably reported but remains inactive. A joint resolution designating Aug. 19 of each year as National Aviation Day also is on the Senate calendar. Bills are pending to encourage travel in the United States through a special Federal board on which the CAA will be represented. Superhighway proposals including airports have been offered but are inactive.

Development of domestic sources of metals useful for aviation alloys is possible through the program of purchasing stocks of strategic war materials, provided in a bill which has passed both

houses. Production of light metals also is contemplated in the Hill bill, on which hearings have been held, although other action has not been taken, to set up an aircraft engineering center as a "yardstick" against private plane manufacturing costs.

The Neutrality Act is up for amendments.

Probable Reason

Charles L. Morris, commissioner of aeronautics for Connecticut and president of the National Association of State Aviation Officials, believes he has found one reason for the small number of aeronautics courses in high schools. He thinks it's because of the timidity of science and mathematics instructors to enter territories with which their students may be better acquainted than themselves. Morris suggests the Civil Aeronautics Authority should set up a small crew of ground instructors who could be sent into different areas of the country to run short units of aviation courses.

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(NEWARK AIRPORT)
LEAVE 7.30 PM

BROWNSVILLE
ARRIVE 8.00 AM

MEXICO CITY
ARRIVE 12.35 PM



THE WAY OF *The Great Silver Fleet*
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Mid-Continent Gets 38c Per Mile Mail Pay in CAA's 1st Rate Decision

Base Mileage Principle Discarded in Favor of Direct Airport-to-Airport Distance; Company Had Requested 40c

The Mid-Continent Airlines rate decision, the first handed down by the CAA, was released Apr. 17, granting the company 38c per airplane mile for 300 lbs. of mail and, discarding the base mileage principle, providing 2.5% of that rate for each additional 25 lbs. on AM26, Minneapolis-Omaha-Tulsa-Bismarck-Huron. The decision is retroactive to Oct. 22, 1938. MCA, which now receives 33 $\frac{1}{2}$ c, had requested 40c on monthly base mileage of 67,000.

The fact that the rate is to apply on direct airport-to-airport mileage, without reference to base mileage limits, is known to meet with the approval of the smaller carriers and also the Post Office. Under the base mileage principle, if a carrier exceeded its base through increased schedules, its mail pay per mile decreased, thus nullifying the benefits of the additional frequencies. The only means by which pay and schedules could advance at the same time was through an unusual increase in mail poundage so as to raise the average loads. MCA, however, will be paid for all miles flown. The P.O. favors airport-to-airport mileage because it eliminates alternate A, B, C and D routes, and will make possible a more accurate compilation of budget estimates.

In disallowing MCA's 40c request, the Authority found that, in view of all the trends, the company had underestimated prospective revenues and overestimated prospective costs. MCA had estimated 1939 operating costs at 53c per mile, but the CAA said that "it would seem . . . that the petitioner's estimate . . . is contrary to pertinent trends."

Discussing losses, the opinion said that "the evidence indicates that the carrier has continuously operated at such annual deficits as to hamper its operations and the maintenance and development of its service." As of Dec. 31, 1938, a total of \$503,136.45 in cash and tangible assets had been invested in the company, and the accumulated losses on that date amounted to \$216,967.29, or 43.1% of the total investment. After tabulating original and subsequent issues of common and preferred stock amounting to \$603,136.45, the CAA stated that the primary cause of the large operating losses is the deficiency of revenue.

"It is clear that the existence of petitioner has depended upon frequent additional contributions of capital," the opinion said, and added that "the carrier's need for greater revenue is apparent." Such needs must be measured in the light of the carrier's other revenue and the necessity for its expansion to meet the national needs under honest, economical and efficient management, the CAA stated.

The opinion of the Authority pointed out that the standards for fixing fair and reasonable air mail rates under the Civil Aeronautics Act differ from those which have controlled public utility and common carrier rate making during the past 40 years. The rate must be fairly compensatory, and assure the stable economic development of the carrier to meet the needs of the foreign and domestic commerce, the postal service and the national defense.

Improved managerial efficiency should be recognized under the new

rate policy, but no compensation should be permitted to cover costs resulting from mismanagement, the CAA said. "The development and encouragement of air transportation through an air mail rate which takes into consideration the general factors of the public interest . . . require that the rate-making provisions of the Act shall be administered in such a manner as to expedite and not retard the attainment for air carriers of an economically sound and stable condition," the opinion stated. "As this objective is approached, there will naturally be an accompanying reduction of the dependence of air carriers upon air mail revenue and a progressive decrease in the rate of air mail compensation to be paid by the government. Such an administration of the Act, must, of necessity, involve a policy of rate determination which will serve to recognize managerial efficiency and to permit benefit therefrom to redound to the carriers, thus providing an incentive to management for further development.

"There is no intent expressed in the Act to superimpose governmental management upon the management of the air carriers. There is, however, a clear intent that managerial policies be so guided, either by the air carriers themselves or through such reasonable control as the Authority may lawfully undertake, that the public expenditures in respect of air transportation may yield the greatest possible results for the public interest as declared in the Act."

MCA's total revenue per revenue mile increased from 1936 through 1938, but cost of operations increased at the same time. The large increase in mileage flown was not reflected in lower cost per revenue mile because of these increasing costs, the opinion said. It attributes these increased costs to use of more expensive equipment, increases in general wages and higher gasoline charges. Most of the company's aircraft and engines is as of today more than fully depreciated. Projected federal expenditures for airway lighting and navigational aids will enable MCA to perform a more efficient operation, the CAA stated, and also pointed out that mail carried by the company has greatly increased since 1935.

The 25-page Mid-Continent decision was received with great interest by the industry because it is believed that subsequent opinions on the smaller carriers' rate cases will follow the same general pattern.

AA's 4th Mail Pay Trip

The Post Office Department has awarded American Airlines a fourth daily mail pay schedule between Newark and Ft. Worth, effective May 1. American is the last transcontinental carrier to receive a fourth schedule, TWA and United Air Lines receiving theirs last year, the former between Newark and Kansas City, the latter between Chicago and Salt Lake City. American's new schedule probably will net the company approximately \$9,000 per month.

New TWA Washington Office

Transcontinental & Western Air, Inc., has announced the opening of a new information office at 15th St. & New York Ave. in Washington, D. C.



IN APPRECIATION

To the employes of United Air Lines, whose ingenuity and diligence in ever advancing the standards of air transport safety, goes credit for accomplishing the scientific achievements on which the National Safety Council based this award.

Therefore it is on behalf of those employes that I extend thanks to the National Safety Council, for this recognition of their effort.

W. J. Patterson
PRESIDENT, UNITED AIR LINES



Sales Director



Dean C. Smith,

Who will direct sales of the Curtiss-Wright 30-passenger transport.

DEAN SMITH NAMED CW-20 SALES HEAD

American Airlines Pilot With Distinguished Record Joins Curtiss-Wright Unit

Dean C. Smith, veteran air transport pilot, has been appointed director of sales of the St. Louis Airplane Div. of the Curtiss-Wright Corp. according to announcement by Charles W. France, general manager of the St. Louis division and vice-president of Curtiss-Wright Corp.

Smith's first assignment will be to direct sales of the 30-passenger CW-20 twin-engine transport which is now under construction. He also will prepare a special flight test program in anticipation of the first ship's completion this summer.

Credited with 14,000 hours in the air and with flying over 2,000,000 miles in virtually every type of aircraft, Smith was a companion of Rear Adm. Richard E. Byrd on the latter's first expedition to the Antarctic region. He has resigned as a pilot on the New York-Chicago division of American Airlines to take up his duties immediately at the plant at Lambert Field in St. Louis.

Taking up flying in the World War, Smith was one of the small group of pilots chosen by the Post Office to pioneer the nation's original air mail routes in 1920. He was one of those rewarded with the Collier Trophy in 1923. He took leave from National Air Transport in 1927 to accompany Adm. Byrd and distinguished himself in the Antarctic by his rescue of Larry Gould, Bernt Balchen and Harold Gjedde from the Rockefeller Mountains after their plane had been wrecked in a storm.

For this rescue he was awarded the Distinguished Flying Cross by the Secretary of War. In addition, he received from the President along with his companions the Congressional Gold Medal in recognition of his efforts in exploration for the U. S. at the South Pole.

He rejoined National Air Transport in 1930 and subsequently became a senior pilot with American Airlines, flying first between Newark and Cleveland via Albany, later between Boston and Newark and more recently between Newark and Chicago. In 1934 he was awarded the Harmon Trophy in recognition of his record as an airline pilot. He is married, has a daughter, and has lived in Maplewood, N. J.

Each Trans-Atlantic Passenger May Cost U. S. \$2,060 in Subsidy

Boeing 307 to Make North Beach-Croydon Flights

Statisticians were in their heyday at the Pan American Airways trans-Atlantic hearing before the Civil Aeronautics Authority which ended Apr. 22 after a solid two weeks' run.

If nothing else was brought out in the testimony it was at least revealed that flying the Atlantic with passenger-carrying clippers is not a shoe-string operation. Admitting that passenger revenue at its very best (four trips a week) will not be over \$750,000 a year, Pan American has requested mail payments of \$4,711,000 annually for maximum schedules, almost one-third of the total mail payments to all domestic carriers.

Passenger fares were quoted at \$375 one way, but the CAA statisticians figured that if PAA's request for mail pay is granted in full it will cost the government \$2,060 for every passenger carried across the Atlantic if four trips a week are made or a minimum of \$996 per passenger if only one trip per week is made.

The statisticians arrived at these figures by computing the extra mail pay in excess of mail revenue and dividing it into estimated passenger loads.

If Pan American's calculations are any guide, trans-Atlantic flying operations will be principally for the benefit of mail and for America's international air prestige. For the hearings revealed that trans-Atlantic operating revenues (passengers & express) are expected to cover only a 10% return on investment and federal taxes.

As an example of how this works out, if two trips per week are operated the total operating revenues exclusive of mail are estimated at \$1.10 per mile, just enough to pay 95.4¢ return on investment and 15.7¢ per mile federal taxes. The other \$5.12 per mile operating expenses will have to be defrayed by mail pay according to PAA's testimony and CAA calculations. And the postage revenue won't come near meeting the \$5.12 per mile differential.

Here is what Pan American has requested for mail payments: One trip per week, 90% performance, \$36.64 per pound; two trips, 86.6% performance, \$26.72; three trips, 83.3% performance, \$21.18; and four trips, 80% performance, \$17.78.

Government postage revenues, on the other hand, are estimated at \$12 per pound. The postage charge per half-ounce was given officially as 30¢, while some deduction must be made in revenue for domestic service at each end of the line. It was brought out in the hearing that the U. S.-Bermuda mail will cost the Post Office about \$67.56 per pound if PAA's request is granted.

Other selected news from the hearing revealed that PAA plans to use a Boeing 307 Stratoliner, four-engine landplane, for one round-trip every two weeks, year round, over the northern route from North Beach Airport to Croydon, England. Only mail & express would be carried.

To encourage express business, PAA said it had planned a special half-price rate of 62½¢ per pound on the Boeing trip, believing that a low rate would encourage business houses to send samples and other small items over the Atlantic by air. Such low-rate express would be subject to payload and also subject to indefinite delay and is expected to net PAA an annual revenue of about \$24,600. Main purpose of the Boeing flights, PAA said, is for experimental flying in the stratosphere.

Stripped of furnishings the 307 is

estimated to have the following available cabin loads: New York-Moncton, 11,578 lbs.; Moncton-Newfoundland, 12,394 lbs.; Newfoundland-Foynes, 6,570 lbs.; Foynes-Croydon, 12,500 lbs. On westbound trips, however, the payload drops considerably because of prevailing winds. The load between Foynes & Newfoundland is estimated at only 2,400 lbs.

Cabin loads on the Boeing 314 clipper were given as: New York-Azores, 8,661 lbs.; Azores-New York, 3,814 lbs.; Azores-Lisbon, 17,714 lbs.; Lisbon-Marseilles, 20,414 lbs.; Marseilles-Southampton, 22,514 lbs.; Lisbon-Southampton, 18,374 lbs.; New York-Shediac, 22,514 lbs.; Shediac-Botwood, 22,514 lbs.; Botwood-Foynes, 11,694 lbs.; Foynes-Botwood, 6,482 lbs.; Foynes-Southampton, 22,514 lbs.

Other news on the Pan American hearing is given elsewhere in this issue.

Consolidated's Boat to be Ready Soon

Consolidated Aircraft Corp., San Diego, hopes to have its 60,000-pound flying boat ready to fly soon when it will test its two 2,100 hp. engines, built by Wright Aeronautical, which provide more power than any in use at this time. The ship, adaptable for either military or commercial use, also can be converted into an amphibian with its retractable beaching gear.

An innovation in structure is that the entire wing area is flush-riveted. Cruising speed is said to be well over 200 m.p.h., and while the flying range is not known, it is believed it will be above 5,000 miles. A feature of the powerful engines is the elimination of vibration and accessibility for repairs provided through a ring mount.

The flying boat is 9,000 pounds heavier than the Martin clippers flying the Pacific, but weighs 5,000 pounds less than the Martin flying boat built for Russia. Consolidated's craft is 5,000 pounds under the DC-4. It is believed American Export Air Lines may be interested in the new ship since it has taken delivery of a smaller Consolidated boat for trial flights.

Skipper Welcomed



Capt. Harold Gray is shown with his wife and son as they greeted him after he set the Boeing 314 "Yankee Clipper" down at Baltimore to complete an 11,117 mile trans-Atlantic inspection flight for Pan American Airways.

International News Photo.

Heads Research



Edmund T. Allen

Who joined the Boeing Co. at Seattle on Apr. 26 as chief of the research division.

Eddie Allen Joins Boeing Co. to Head Research Division

Edmund T. Allen, well known test pilot and consulting engineer, joined the Boeing Aircraft Co. of Seattle as chief of the company's research division on Apr. 26, it was announced by Claire L. Egvedt, president.

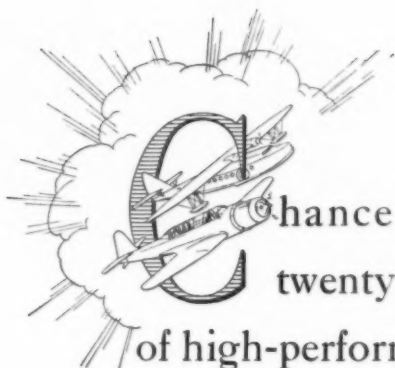
In his new post Allen will be in direct charge of all flight testing, aerodynamics, and tunnel research. As one of his first projects he will personally resume flight testing of the second Boeing 307 Stratoliner about May 15. The Air Safety Board of the CAA is expected to have its report on the recent accident of the first Boeing 307 completed by that date.

Allen has had a long and colorful career as test pilot and has been retained on many occasions by Boeing. He was chief test pilot for the Boeing 314 74-passenger clipper and tested the Stratoliner in its initial stages. Now 43, Allen began his aviation career in 1917 when the war interrupted his studies at the University of Illinois. He joined the aviation section of the Army Signal Corps to undergo flight training, and after serving as instructor he was assigned overseas to the engineering division of the Army to study British flight testing methods at Martlesham Heath, England.

Before the armistice he returned to McCook Field at Dayton, later resigning from the Army to become the first test pilot for the NACA at Langley Field. In 1919 he returned to the University of Illinois for his second year and then went to M.I.T. for two years' further study of aeronautical engineering.

Allen's test piloting for various airplane manufacturers began in 1923. Two years later he became a pilot of the Post Office Dept. air mail service during the pioneering days of cross-country air mail flying, subsequently becoming a pilot for Boeing Air Transport which took over the mail service from Chicago to San Francisco. Since 1932 he has been engaged exclusively in test piloting, having built up approximately 6,700 flying hours and having tested 30 different types of planes. These have ranged from the smallest pursuits to the big Boeing 15 super bomber and the 314 clippers.

Two Great Names Combine



Chance Vought Aircraft, for over twenty years a consistent supplier of high-performance airplanes to the United States Navy, and Sikorsky Aircraft, builders of world-famous flying boats and amphibians, have now been consolidated into a single unit known as Vought-Sikorsky Aircraft, a division of United Aircraft Corporation.

Headquarters of Vought-Sikorsky Aircraft are at Stratford, Connecticut, where enlarged facilities offer every advantage for the design, testing and production of both land and water-based airplanes.

VOUGHT-SIKORSKY AIRCRAFT

STRATFORD, CONNECTICUT

One of the three manufacturing divisions of

UNITED AIRCRAFT CORPORATION

CAA APPROVES NWA \$480,000 RFC LOAN

Company Needs Larger Equipment;
Will Replace Lockheed 14's
With 6 DC-3's

Approval of Northwest Airlines' application for a \$480,000 loan from the Reconstruction Finance Corporation, to be used for the purchase of six Douglas DC-3's and other equipment, was announced by the CAA on Apr. 17. Section 401 of the Civil Aeronautics Act requires the Authority to approve or disapprove all requests for loans from government agencies.

The \$480,000, together with other funds, is to be used as follows: six DC-3's, \$720,000; six engines, \$73,800; spare propellers, \$33,600; spare parts, other than propellers, \$22,500 and ship radio, \$8,000. NWA is to pay the RFC \$12,400 monthly, beginning in six months, balance in four years, such payment to be applied first on interest and then on principal. The loan is to be secured by mortgages on equipment having a value of 166⅔% of the principal amount.

"Applicant seeks this loan because the management has decided that it is advantageous to install 21-passenger DC-3 equipment on its system, to replace its present 10-passenger 14H equipment," the CAA order of approval stated. "It intends to continue using its Lockheed 10A equipment for certain types of service. The management feels that the DC-3 equipment will serve a dual purpose: first, to take care of the heavy traffic on the eastern part of its route, and second, to offer equipment and accommodations identical with those presently offered by the transcontinental carriers."

NWA pointed out to the Authority that traffic between Chicago and the Twin Cities is very heavy and that it expects to increase its business to the west coast. During spring and summer, passenger and mail loads have made it necessary to run seven round trips daily between Chicago and Twin Cities, but with DC-3's, these trips could be decreased to five, NWA said. "The type of equipment to be operated by an air carrier is primarily a problem for managerial judgment, which should be allowed to control, unless it appears to have been exercised contrary to the public interest," the CAA stated. "It seems clear in the present case that some change of equipment is warranted. . . . While the per-mile cost of operating the DC-3 is higher than that of the Lockheed 14H, the management feels that this greater cost will be more than offset by increased earnings. The high potential traffic possibilities of the portion of the applicant's system between Chicago and Twin Cities cannot be economically developed with the limited capacity of the present equipment. While the advisability of a change is not established with respect to the balance of the line on the sole consideration of present traffic volume, operating considerations, the applicant's belief that it must offer facilities comparable to those of transcontinental lines in order to compete, and its belief that earnings will benefit thereby, have resulted in a managerial decision which the Authority does not find reason to challenge."

Originally, NWA had requested a loan of \$860,770, later decreasing this to \$528,240. However, the company has found that it will need only \$480,000.

New Ohio Service

Athens, O., Apr. 17.—Air service from Athens to Columbus, and to Marietta and Parkersburg was started here by Athens Airways, Inc., with a Waco cabin plane. Two flights daily will be made to and from Columbus, and the schedule indicates a one-way flight in 40 minutes.

CAA Disapproves Pan Am-American Export Trans-Atlantic Agreement

The CAA has announced that it disapproves of an agreement entered into by Pan American Airways and American Export Airlines on Sept. 22, 1938, concerning a division of European areas to be served by the respective companies, on the grounds that such agreement might lead to a monopoly and is not in the public interest.

Under the agreement (AMERICAN AVIATION, Oct. 15, 1938) Pan Am was not to operate trans-Atlantic flights into Italy, Yugoslavia, Roumania, Albania, Bulgaria, Greece, Turkey-in-Europe, Turkey-in-Asia, Western Asia to Persian Gulf, Mediterranean islands or North Africa. American Export was not to operate into Great Britain, Ireland, Bermuda, Holland, Denmark, Iceland, Norway, Sweden, Finland, Estonia, Latvia, Lithuania, Hungary or Czechoslovakia (as it existed Sept. 22, 1938). Pan Am operations to Russia were to be over or through Poland or a country to the north; operations to Russia by Export over or through a country to the south of Poland.

In France and Germany, both companies were to endeavor to secure landing and flying rights on an equal number of round trips, provided that the respective party was able within a reasonable time to avail itself of any permission granted. If one party

was not able to do this, the other party was to receive the permission and the first party, when ready, was to receive only one-half of additional frequencies subsequently permitted.

Discussing the latter provision, the CAA stated that the exclusion of one party from trans-Atlantic operations for an indefinite time might "lead to a monopoly of such transportation by the other party, and that therefore such provision is adverse to the public interest."

The Authority ruled "that the terms of such agreement are such as to fix in advance territorial operating rights which should be reserved for future determination in the light of the development of the services of the respective contracting parties; that, therefore, such contract might discourage the development of an air transportation system properly adapted to present and future needs of the foreign and domestic commerce of the U. S., of the postal service and of the national defense; that it might impair sound economic conditions in such transportation, might prevent the coordination of transportation by air carriers, and might prevent competition. The Authority . . . finding that the contract . . . is adverse to the public interest, hereby disapproves such contract."

New York U. To Offer Curriculum In Rotary Wing During 1939-40

Believed to be the first in an American or European university, a new graduate curriculum in rotary wing aircraft

will be offered by the Guggenheim School of Aeronautics of New York University during 1939-40, it was announced Apr. 15 by Dean Thorndike Saville. The new curriculum will be open to students qualified by previous training in aeronautics, mathematical physics or allied fields of engineering and will be the culmination of the university's previous work in rotary wing aircraft, Dean Saville said. Courses will lead to the degree of master of aeronautical engineering.

Students pursuing the graduate curriculum will take a fundamental course in aerodynamic and structural theory or rotary aircraft. Courses also will be given in advanced machine design, applied mathematics, theory of elasticity and dynamics of aircraft. Maj. Gen. H. H. Arnold, chief of the Army Air Corps, is detailing an officer with autogiro experience to enroll in the new curriculum.

At the same time there will be available the de la Cierwa Fellowship, created in January under auspices of a group of leaders of rotary wing. The students will be under the supervision of Dr. Alexander Klemin, director of the Guggenheim school, who also will represent the university on the fellowship committee.

Among problems facing researchers in this field of aviation, Dr. Klemin pointed out "the competitive merits of the superimposed airscrews, placed one above the other and rotating in

opposite directions versus the airscrews placed on either side of the fuselage and also rotating in opposite directions."

10 TO FLY EASTERN

Rickenbacker Announces Names of New Pilots

Capt. E. V. Rickenbacker, president and general manager of Eastern Air Lines, has announced the names of 10 new pilots for the line. They are:

W. E. Johnson, domiciled at Atlanta. He joined Eastern four years ago as transportation agent at Mobile, Ala., from which position he recently was promoted to pilot.

Henry C. Gilmore, flying Newark to Washington. Atlanta or Miami; domiciled at Newark.

Edgar Douglas Sager, domiciled at Newark.

James H. Crawford, based at Newark.

Charles E. Fisher, domiciled at Newark.

Norman Kenneth Warner, flying Newark to Washington. Atlanta or Miami.

M. C. Weir, based at Miami.

Claud Alton O'Quinn, domiciled at Newark.

William C. Haines, flying Newark-Washington, based at Newark.

Jack Thomas, flying Newark to Washington. Atlanta or Miami; domiciled at Newark.

TWA Expands Service

Effective May 1, TWA has announced it will again increase available passenger seat miles to an all-time record high of 17,042,552, converting six flights operating between Chicago-Pittsburgh-Philadelphia-New York from a six-day operation to daily service. In addition, a third daily round trip flight will be established between Kansas City and Chicago. "The increase in schedules which TWA inaugurated on Mar. 1, 1939, has been most successful in producing new business," announced Paul E. Richter, executive vice president. "Aside from the increased scheduling, the customary change from winter to summer flying times on May 1 enables us to institute faster schedules," he said.

EAL Mechanics Strike Continues; 20-25% Reported Involved

The strike of Eastern Air Lines mechanics, which began at 12:01 a. m. on Apr. 14, was still in effect as this issue went to press with about 56 licensed mechanics out of a total of approximately 250 to 275 participating. Issue involved in the strike is recognition of the Air Line Mechanics' Association as bargaining agency.

The ALMA claims a total walk-out of 120, but the CAA, which has been watching the situation closely, states that the number of licensed mechanics involved is 56. Certain unlicensed ground personnel nominally classified as mechanics may be participating, however. All strikers are ground service employees. Engine overhaul, electrical, radio and instrument mechanical employees are not involved. Out of a total crew of 13 in Washington, 12 were on strike, and 22 were out at Newark. Atlanta and Miami also were affected. The CAA has certified replacements for the strikers.

It has been estimated that the walk-out has not affected more than 10% of Eastern's normal traffic loads, and the company's Washington office posted a sign in its downtown ticket office stating that "servicing of planes is in no way interrupted and full standards of efficiency are being maintained. Neither our pilots nor any other employees except these few ground mechanics are affected." Sam Solomon, manager of Washington airport, refused to allow picketing at the terminal, because the field is used by other airlines.

Pickets at EAL's Washington office were carrying placards stating "Who Take a Chance?" and airline officials believed that this might harm the industry as a whole, regardless of the EAL strike issues.

All-American Starts Service May 12-14

Service to some of the cities on AM1001, Philadelphia-Pittsburgh, and AM1002, a Pennsylvania-West Virginia-Ohio route, will be inaugurated on May 12 and May 14 by All-American Aviation, Inc., which was awarded the contracts to operate the lines with Dr. L. S. Adams' pick-up and delivery device.

On AM1002 service to 12 of 30 towns will start May 12, the remainder of the stops to be added May 28, June 11 and June 25. Flights to nine of the 27 towns on AM1001 will begin May 14, with additions being made on June 4, June 18 and July 2.

The Post Office advised All-American that it had been deemed advisable to stagger the inaugural schedule instead of beginning service to all 58 cities on both routes at the same time. This will give All-American an opportunity to shift its six Stinsons from one route to the other to handle the large volume of philatelic mail which is expected.

TWA Has Record Spring Traffic

The largest spring traffic in the history of Transcontinental & Western Air has been reported by the line for March, with 6,007,567 passenger miles flown, an increase of 70% over February. The report showed 892,880 revenue miles operated during March, an increase of 38% over February, with an increase of 71% in passengers over the previous month and 24% over Mar. 1938. This was the largest March flying load since the line began operating in Apr. 1926.

NORTHWEST AIRLINES

Chooses Douglas



Perfecting

A SERVICE ALREADY FAMOUS

True to the transportation tradition of the empire it serves, Northwest Airlines perfects its Seattle-Chicago service with luxurious Douglas DC-3 21-passenger airplanes. The Northwest has always enjoyed the best in transportation. In recognition of this, Northwest Airlines is adding these modern, most proven air transports in the world to an already famous service. Douglas Aircraft Co., Inc., Santa Monica, Calif.



GO "DOUGLAS" ON THESE WORLDWIDE AIRLINES

NORTH AMERICA: American Airlines Inc. . . Braniff Airways . . . Canadian Colonial Airways, Inc. . . Eastern Air Lines . . . Northwest Airlines . . . Pan American Airways . . . T.W.A. . . United Air Lines . . . Western Air Express . . . Wilmington-Catalina Airline . . . **SOUTH AMERICA:** Pan American Airways . . . Pan American Grace Airways . . . **AUSTRALIA:** Airlines of Australia . . . Australian National Airways . . . **EUROPE:** A. B. Aerotransport, Sweden . . . Air France, France . . . Avio Linee Italiane, Italy . . . C.L.S., Czechoslovakia . . . K.L.M., Netherlands . . . L.A.P.E., Spain . . . L.A.R.E.S., Roumania . . . LOT, Poland . . . S.A.B.E.N.A., Belgium . . . Swissair, Switzerland . . . **ORIENT:** China National Aviation Corporation . . . K.N.I.L.M. in Netherlands Indies . . . Japan Air Transport

Oregon Company Formed to Build Planes of Geodetic Construction

All-Wood Craft With No Spars or Supporting Members Claimed
Easy and Inexpensive to Construct; Frame Weighs
60 lbs.; Material Costs \$30

The North Pacific Aircraft Corp. has been formed at Portland, Ore., to produce an all-wood airplane of geodetic—or basket weave—construction designed by George Yates and Allan D. Greenwood, the latter a state aeronautics inspector for Oregon.

President and principal stockholder is Edgar W. Smith of Portland, former president of the Pillsbury-Astoria Flour Co., wheat rancher and member of the state board of higher education. Unless the company is merged with another west coast aircraft concern, a plant will be constructed on a site adjoining Swan Island Airport where an option has been obtained.

A full-sized flying model is now undergoing flight tests and is the fourth plane of geodetic construction to be built in Oregon since 1928. Three have been of wood, one of steel. The present model is twin-engined, powered with two 50 hp. Menascos.

The ship has a total empty weight of 1,023 pounds, wing span of 33 feet and length of 24.3 feet. Tests have revealed an estimated top speed of 140 mph., a cruising speed of 120 mph., landing speed of 45 mph., and single engine top speed of 93 mph. Cruising range is given as 700 miles. It has retractable landing gear and flaps and at present the ship is called the Greenwood-Yates Bi-Craft.

Planes embodying geodetic construction already exist. Three Vickers Wellesley bombers built in England and holders of the present world's non-stop record of 7,162 miles, have fuselages of woven strips of steel. Use of metal greatly increases cost of construction, however, while the Greenwood-Yates plane is said to be built of spruce wood costing only \$30.

In substance the geodetic method is said to provide strength to the structure and to absorb shocks, no single part being subjected to more strain than any other part. Familiar examples are the lattice-like masts or fighting tops of some battleships.

By twining strips of spruce—one-half inch wide and one-quarter inch thick—the fuselage and other parts of the Greenwood-Yates Bi-Craft may be constructed without resort to the addition of special strengthening members and the extra weight this addition implies. Points at which the strips cross are glued. The fuselage and wings are fabric covered.

"Another sidelight on geodetic construction is offered by the old geometric fact that the shortest distance between two points on a curved surface is a curve," the company announcement said. "The principle applied to airplane construction finds engineers curving the supporting members of the airplane to fit the curved surfaces of which they are really a part. The plane's frame is not lined up around a long axis and an inordinate amount of material used to do it. The result of the geodetic method is that the framework consists of what looks like spirals criss-crossing each other from nose to tail."

The frame of the Portland plane weighs just 60 pounds.

According to the company geodetic construction has the further advantage of greater span and less depth of wings—greater aspect ratio. "Such wings are more efficient in cruising operations for they have lower induced drag. This means less fuel burned per hour

of operation and greater distance for the same load. As no internal bracing is required the centers of such wings are ideal spaces for fuel tanks."

Yates began experimenting with basket weave construction in 1928 at Beaverton Airport on the outskirts of Portland. His first effort was a monoplane built of quarter-inch seamless steel tubing, woven in geodetic fashion with all joints brazed instead of welded. This ship, called the "Stiper," has flown since Mar. 30, 1929 and has more than 300 hours flying time. The original fuselage and wings have outlived three engines and still show no signs of fatigue or wear, according to the company. Cost of the steel tubing proved to be a drawback, however.

Yates then turned to the use of wood and in the spring of 1933 built the "Oregon Sport," a single-place sport plane weaving fuselage and wings of spruce strips. This ship was powered with a 50 hp. engine and was unique in that it had no spars in its wings and depended entirely for its strength on its geodetic construction. Oregon requires all pilots and planes to have a state license and Greenwood's introduction to this new type of construction came when he inspected and flew the ship for a license. The "Oregon Sport" flew from 1933 until last November when a youthful pilot attempted a forced landing in a school yard after an engine failure. Despite the absence of spars, only the wing tip was broken. The landing gear of steel was demolished. The fuselage was scarcely damaged at all.

Last year Greenwood designed his personal airplane for two engines. The ship was all ready for test flight when last August 29 the ship was accidentally backed into a blowtorch in Yates' shop at Beaverton and destroyed along with a hangar and other planes. The present ship is a duplicate of the one that burned. A number of authorities have inspected the airplane and discussions for mass production of planes of this construction, as trainers, have been held with military departments.

The company believes as many as 1,000 ships can be produced a month since construction is relatively simple and skilled mechanics are not necessary. Conferences have been held with leading furniture manufacturers in regard to mass production.

Four views of the geodetic airplane built by Al Greenwood and George Yates which will be manufactured by the newly-formed North Pacific Aircraft Corp. at Portland, Ore. Greenwood is shown in the cockpit in one of the photos.



Alabama Air Tour

Birmingham—An Alabama Air Tour will be held May 31-June 2 under sponsorship of the Alabama Aviation Commission and with the cooperation of the Birmingham Aero Club and the Alabama section of NAA. The tour will start from Montgomery on May 31 and end in Birmingham June 2 on the opening day of the Birmingham Air Carnival. Ten other cities will be visited.

To Stress Safety & Ease

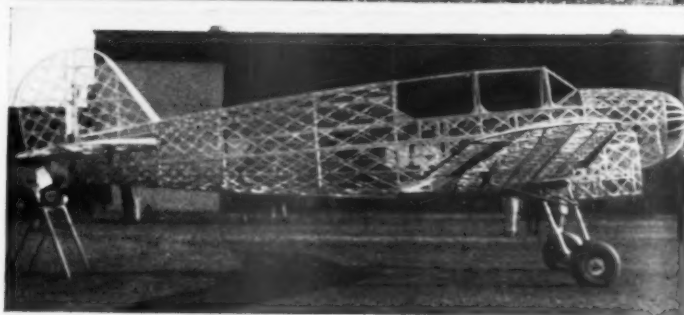
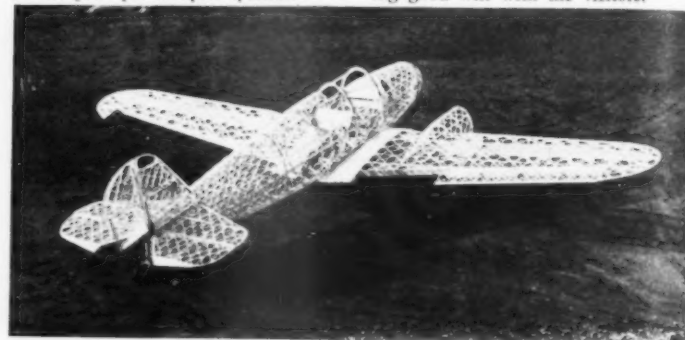
The student branch of the Institute of the Aeronautical Sciences of the University of Michigan, Ann Arbor, in collaboration with the University Flying Club, the Glider Club and the Washenaw County NAA chapter, has planned a two-day aviation demonstration and banquet for May 20-21. Safety and ease of flying will be stressed in student demonstrations and in exhibits by manufacturers. Chairman Robert C. Hinkley of the CAA will be the principal banquet speaker.

Big Birmingham Air Carnival's Here Again

Steadham Acker, manager of Birmingham Airport at Birmingham, Ala., and one of aviation's premier showmen, has announced the 9th annual National Air Carnival to take place June 3-4.

The free air show which annually attracts tens of thousands of spectators, will be bigger & better than ever according to announcements. There will again be a contest for the selection of "Miss American Aviation," and Earle Wheeler, imaginative publicity chairman, says the carnival this year will attract "twice the number of beauties for this enviable title."

Invitations are now going out from Jim Jones, president of the city commission, and from Hayden Brooks, president of the Birmingham Aero Club, all promising "a week of revelry and entertainment spiced with that true Southern Hospitality that leaves a lasting good will with the visitors."



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Airport Construction Conference to be Held at Michigan U., June 7-9

A national conference on airport construction, devoted to technical features of design and construction, will be held at the University of Michigan, Ann Arbor, June 7-9, sponsored by the NAA, the National Association of State Aviation Officials, the American Association of Airport Executives and the Michigan board of aeronautics in collaboration with the U. of M.

The interest and cooperation of the CAA has been assured and it is anticipated that the Authority's active participation will take the form of presenting tentative requirements in airport construction as revealed by the recently completed national airport survey. The importance of this phase of aviation development had been given attention even before the results of the national survey were available. The CAA's airport section has been engaged for many months in the preparation of a manual of airport construction which is now in the process of publication.

James H. Cissel, professor of structural engineering, and William S. Housel, associate professor of civil engineering, at the university, have made

the coming conference an outgrowth of a cooperative arrangement between the university and the CAA, inaugurated last summer. Members of the civil engineering faculty have assisted in the preparation of the manual of airport construction collaborating with members of the airport section stationed at Ann Arbor.

"From our contact with aviation officials we have found the general opinion that a meeting of this character which is devoted to technical engineering discussions with the objective of producing definite design and construction recommendations will be very welcome to the aviation field, inasmuch as the majority of aviation meetings have dealt with generalities rather than specific problems," it was pointed out by Cissel and Housel.

Hotel accommodations are available at the Michigan Union and local hotels, the announcement said. Preregistration and registration of rooms is recommended as available facilities may be overtaxed. Communications should be addressed to the Airport Construction Conference, Michigan Union, Ann Arbor, Mich.

Memphis Planning Big Air Show for May 14

Memphis—For the first time since its inception in 1931, the Memphis Cotton Carnival will have an air show as one of its features. The carnival runs for almost a week but the air show will climax the festivities on Sunday, May 14. W. R. Kent, well known aviation enthusiast, is general chairman of the air show.

A small admission will be charged and arrangements are being made to accommodate 50,000 persons. All of the air events will be supervised by the CAA as a Class A air meet. There will be no races, no dangerous stunting, no freak thrills and no beauty contests. But Memphis has contracted with a number of outstanding aerial performers such as Mile Murphy, Squeak Burnett, Art Davis, Don Walters, Clarence McArthur and others.

Jack Story is expected to be announcer. Starting the day's events will be a gas model contest and the closing event in the afternoon will be an old-fashioned hot air balloon ascension. Latest aircraft will be flown in parade form. Gulf Oil Corp. is supplying free oil and gasoline for the show and for visitors who fly in.

Ryan Grad With Southern Air
Robert Hall, graduate of Ryan School of Aeronautics, is now chief mechanic and instructor at Southern Air Service, Shushan Airport, New Orleans.

Heads Flying School



R. D. W. Vroom, president of the Lufberry Flying School at Wallingford, Conn., is shown above with his Lycoming powered Taylorcraft. Thirty students and licensed pilots fly the ship.

Negro Pilots Goodwill Flight Sponsored by Philadelphians

A flight "to create goodwill between this country and the Republic of Haiti, to encourage better commercial relations between colored people of America and the Haitians and to encourage aviation among youth of the colored race" was made during April in a Jacobs powered Waco by E. C. Wright, treasurer, Citizens & Southern Bank and Trust Co., Philadelphia, with C. Alfred Anderson, Negro pilot. Promoted by Maj. R. R. Wright, president of the Philadelphia bank, the Philadelphia Negro chamber of commerce, the National Economic & Social Betterment Council and a number of Philadelphia citizens, the flight included Columbia, S. C.; Savannah, Ga.; Jacksonville, Daytona Beach and Miami, Fla.; Havana and Santiago, Cuba, and Port au Prince, Haiti.

'Aircade' Committee Named

Charlotte, N. C., Apr. 17—Members of the committee organizing an "aircade" which will fly to New York City on June 17 are: George Cramer, chairman; Mr. and Mrs. W. C. Patterson; Dr. F. M. Boldridge, president of the Carolina Aero Club; and C. O. Kuester. The "aircade" is being sponsored by the aero club and will include about 75 or 100 privately owned planes. Stops will be made at Richmond, Washington, Baltimore and Philadelphia. The group will attend North Carolina Day, June 19, at the N. Y. World's Fair.

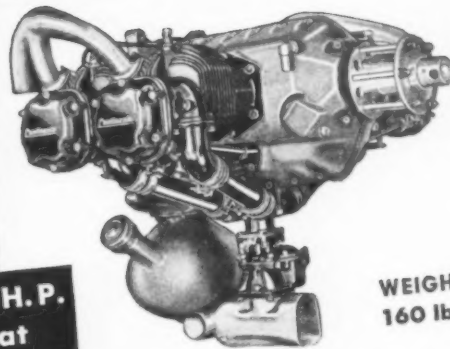
Facts About Florida

The aviation division of the state road department of Florida, of which Herbert C. Whitney is director, has published a brochure entitled "Facts About Aviation in Florida." Copies may be obtained by writing to room 10, Martin Bldg., Tallahassee, Fla. Dewey W. Cole is assistant director of the division and Mrs. Jewel Taylor Puckett is secretary.

Texas Managers to Meet

The Airport Managers' Association of Texas has selected Galveston for its 1939 conference scheduled May 28-29, Gus A. Amundsen, Jr., manager of the convention department of the Galveston C. of C. announced Apr. 13.

Continental ANNOUNCES THE NEW A-65 AIRCRAFT ENGINE



65 H.P.
at
2300
R.P.M.

WEIGHT
160 lbs.

A.T.C. 205

HERE is a new Continental Engine for the small plane owner that will make brilliant history! It is a typical Continental masterpiece of engineering and design. It delivers 65 H.P. (at 2300 r. p. m.) with exceptional smoothness, flexibility and maneuverability. The A-65 has a three main-bearing crankshaft of chrome nickel molybdenum steel of the same rigid specifications as crankshafts used in engines of much higher power output. Features include: (1) Hydraulic tappets eliminating valve adjustments and valve maintenance between main overhauls; (2) Individual steel cylinders with aluminum cylinder heads shrunk and screwed onto the barrels; (3) Overhead valves; (4) Engine pressure lubrication to rocker boxes; (5) Built-in carburetor air heater; (6) Removable connecting rod bearings. The A-65 is available with integral oil sump.

COMING SOON! Continental A-75
75 H.P. Available for delivery on or before May 15.

CONTINENTAL A-40—A-50 and A-65 are now standard or optional on all small planes.

51 Authorized Factory Service Stations
Throughout the World.



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Aircraft Engine Division

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DETROIT, MICHIGAN

Private Fliers Plan Membership of 10,000; Vote 7-Point Program

New York, Apr. 7.—National expansion to at least 10,000 members and adoption of a seven-point program were voted last night by the Board of Governors of the Private Fliers Association, to meet the need for a central voice for non-scheduled civil aviation.

Among its aims, the PFA, headed by A. R. Stevenson, will endeavor to have the Civil Air Regulations simplified, restrictions on private flying reduced, and local and state regulations which duplicate federal regulations eliminated. It was decided to back a continued CAA civilian pilot training program, and to work for fair allotments for funds for off-airline airports. Attention is to be given to means and methods which would tend to reduce accidents, and the PFA decided to oppose state laws on liability or compulsory insurance as well as any legislation regarded as detrimental to the interests of private flying.

In connection with its expansion move, the PFA has reclassified its membership and a \$1 voting membership now will be offered. Such memberships previously were restricted to licensed non-professional pilots and to student pilots.

A new membership committee, headed by W. W. Brinkerhoff, was approved, and consists of Moss Patterson, Oklahoma City; Florence Boswell, Cleveland; Jack Nelson, New York; Frank Fuller, Jr., San Francisco, and Jerry Fairbanks and Henry King, Los Angeles.

A. R. Stevenson, president, emphasized that a large, active and independent association is necessary to prevent the private flyers from being pushed aside in favor of the airlines and military aviation. "A strong civil aviation industry is an essential part of defense in the air," he said.

Maneuvers Scheduled May 6-7

Langley Day Air Maneuvers, sponsored by the Washington Air Derby Assn., will be held May 6-7 at College Park (Md.) airport. Fifteen events have been scheduled including demonstrations of Erco, Waco, Stinson and Howard aircraft. Trophies will be awarded winners in the competitive events.

No. 1 Entry

Lieut. Robert M. Stanley, flying instructor at the Naval Air Station, Pensacola, Fla., is the official No. 1 entry for the 10th annual National Soaring Contest to be held from June 24 to July 9 at Elmira, N. Y. He will enter his own sailplane which he designed and built on the west coast last year.

Stinson Announces Details of 105, 3-Place Monoplane to Sell at \$2,995

Details of the much-discussed new 105, manufactured by Stinson Aircraft Corp., Wayne, Mich., have been released by the company, marking its entry into the low-priced field at \$2,995, filling "the yawning market gap between the light planes and the four- and five-passenger ships selling at from \$7,000 to \$20,000." The three-place 105 has a high speed of 115 mph. and cruises at 105 mph. Range is 420 miles.

A high-wing monoplane with semi-cantilever wings and Stinson cantilever landing gear, the 105's reception is being watched with great interest by the flying public and the industry. Safety features include slots, flaps and hydraulic brakes.

Stainless steel has been used to embellish the outward appearance of the 105. The motor is covered with streamlined cowlings. Stainless steel grilles cover the cooling air inlets to the motor and carburetor intake, and stainless steel housings cover the exhaust pipes. Colored plastics and stainless steel have been used on the instrument panel. Dual controls are standard equipment, and toe brakes of the Goodrich-Hayes hydraulic expander type are used.

The flaps are of the latest NACA slotted type and are located in the trailing edge of the wing between the cabin and the ailerons. Slots are of the fixed, built-in type, and extend over 50% of the aileron span to provide increased lateral control at high angles of attack.

Specifications follow:

Weight empty	925 lbs.
Gross weight	1,575 lbs.
Wing loading	10.2 lbs. per sq. ft.
Power loading	21 lbs. per hp.
Rate of climb (sea level)	
Fully loaded	430 fpm.
Service ceiling, fully loaded	13,500 ft.
Landing run	100 ft.
Fuel consumption	25 mi. per gal.
Span	34 ft.
Length	22 ft.
Height	6 ft. 5 ins.

Wings are fabric covered, have spruce spars, ribs of pressed metal, steel drag trusses, steel tie rods and metal struts. Leading edge is metal covered. The 18-gallon fuel tank is located in the right wing. Vertical fin is a cantilever surface built up from steel tube spars and ribs and is built integral with the fuselage structure.

The fuselage is built up as trusses from steel tubing, is welded and fabric covered. Engine mount is removable and rubber vibration dampers are provided at the engine mounting feet. Two doors provide for cabin accessibility. Tail wheel is a full swiveling type, with a leaf spring as a shock absorber. A self-centered anti-shimmy damper is provided.

The engine is a Continental aircooled four-cylinder, developing 75 hp. at 2,600 rpm. Dual ignition and controllable heated air for the carburetor are pro-

vided. Propeller is a fixed pitch wood type, provided with metal tips. A storage battery to operate navigation lights, radio, etc., is standard equipment.

Itinerary of Florida Tour is Announced

Leaving Jacksonville at 9 a.m. on June 21, the annual air tour sponsored by the aviation division of the Florida state road department this year will visit the New York World's Fair. According to H. C. Whitney, director of the division, it is planned to have each of the 67 Florida counties sponsor at least one plane, with the name of the county painted thereon. Any commercial company may sponsor a plane, with suitable advertising, but no ship will be permitted to enter the cruise and charge a fee for passengers.

The Gulf Oil Corp. will furnish all gasoline and oil gratis for the tour. The cruise actually will begin at West Palm Beach where, on the 18th, the yearly meeting of the Florida Aviation Association will open. The remainder of the itinerary follows:

June 22: Charleston, S. C. to Raleigh, N. C. to Richmond, Va.
June 23: Richmond to Washington, D. C.
June 24: Washington to Camden, N. J. to New York.
June 24-25-26: World's Fair.
June 27: Leave New York; to Baltimore, Md.
June 28: Baltimore to Richmond to Raleigh.
June 29: Raleigh to Charleston to Savannah, Ga.
June 30: Savannah to Jacksonville, where tour ends.

Glider Crosses Channel

What was believed to be the first unassisted glider flight across the English Channel was made Apr. 22 by G. H. Stevenson, 27-year-old London Gliding Club member. He landed near Boulogne three hours after leaving Dunstable. Distance traveled was 125 miles. With the aid of a plane, the Channel had been crossed before by glider.

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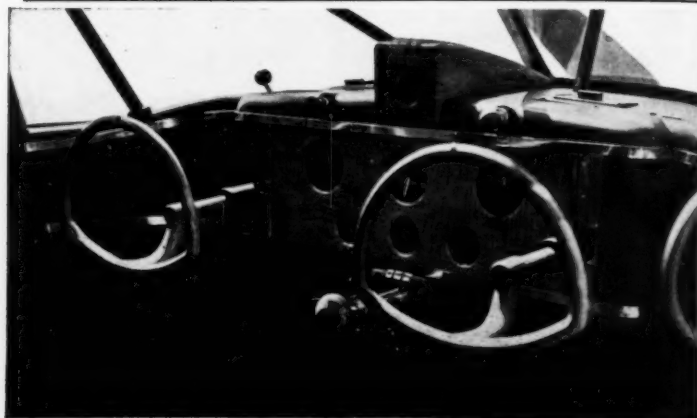
Aero Groups

Lansing, Mich.—The "Michigan Plan of Flying Clubs" now operates at Ionia and Bay City. New clubs are being formed at Big Rapids, Reed City, Petoskey and Grayling.

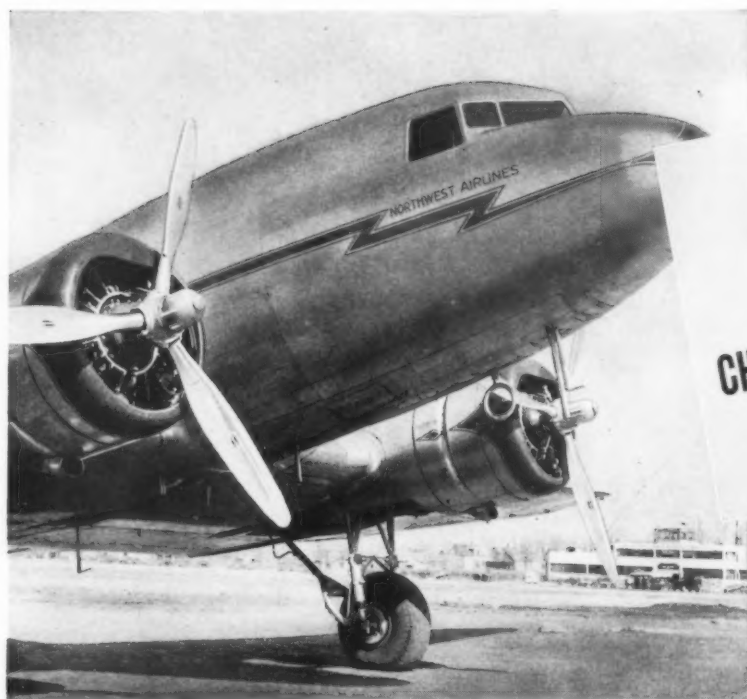
Long Island City, N. Y.—The recently organized Queens Flying Club which elected Nat Cutler president has chosen other officials as follows: Anthony Scudiere, treas.; Guy Perry, secy.; Arthur Schwartz, sergeant-at-arms. Cutler and Scudiere are founders of the new club.

Youngstown, O.—The Junior Chamber of Commerce has organized a flying club which has purchased a two-place sport plane with a 50 hp. motor. Wilbur T. Blair, Jr., is president of the junior chamber; Wendell C. Eckert is chairman of the junior chamber aviation committee; J. Ralph Seidner, Jr., is flying instructor, and Alfred E. Reiman, Jr. is secy.-treas. of the flying club.

St. Louis, Mo.—Serving as president for the second consecutive year, Maj. Ralph Page, manager of Lambert-St. Louis Municipal Airport, has been elected head of the St. Louis NAA chapter, the nation's largest. Joseph M. Darst was named 1st vice-president; Ralph Bugby, 2d vice-president; Guy W. Faulkner of the CAA at St. Louis treasurer; W. E. Nickey, secretary; Howard Goebel of the St. Louis CAA assistant secretary. George Logan, national NAA vice-president, is new chairman of the board of directors of the St. Louis chapter. The board includes Albert Bond Lambert; W. Rufus Jackson; George E. Bounds, Chicago & Southern Air Lines; Harry Horner, Naval reserve aviation base; Buck Taylor, 35th division, Missouri National Guard air unit, and Clyde Brayton, Brayton Flying Service.



Three views of the Stinson 105. Note modernistic instrument panel. The ship has wing slots and flaps and seats three.



NORTHWEST STEPS UP CHICAGO-SEATTLE-PORTLAND AIR TRAFFIC



NORTHWEST AIRLINER AT CHICAGO MUNICIPAL AIRPORT



George E. Gardner,
Operations Manager.



H. A. Aune,
Supt. of Maintenance.



Louis E. Koerner,
Supt. of Ship Overhaul.



Ralph Gorer, Supt.
of Engine Overhaul.

WINGING THEIR WAY over the 1900-mile route between Chicago and the Pacific Northwest, Northwest Airliners carry an ever-increasing number of passengers.

Across the plains, over the mountains, Northwest flies one of the most scenic air routes in North America.

And how carefully each flight is planned, how exacting is Northwest's procedure. Not one small detail is left unguarded.

Ever since January 1935, Northwest Airlines has used New Texaco Airplane Oil.

In this wise choice, Northwest aligns itself with other great airlines. *More scheduled airline mileage is flown with New Texaco Airplane Oil than with any other brand.*

Trained Texaco aviation engineers offer aid in the proper selection of Texaco Aviation Products, available at all important airports and through 2229 Texaco warehouses.

The Texas Company, Aviation Division, 135 East 42nd Street, New York City.



Propeller Shop, Northwest Airlines



View through Maintenance Shop



View of Instrument Dept.

NEW TEXACO AIRPLANE OIL



Texaco Dealers invite you to tune in The Texaco Star Theatre—a full hour of all-star entertainment—Every Wednesday Night—Columbia Network—9 E.D.T., 8 E.S.T., 8 C.D.T., 7 C.S.T., 6 M.S.T., 5 P.S.T.



Corner of Engine Overhaul Dept.

11 YEARS WITH UNITED Hal Nourse Directs Budget Making for W. A. Patterson

Hal E. Nourse, director of budget control and statistics for United Air Lines, celebrated his 11th anniversary with United and its predecessor companies by accompanying W. A. Patterson, president, and a dozen members of the United staff to Washington for the CAA hearing on the company's petition for air mail compensation adjustments on a pound-mile basis.



Nourse

Nourse was first connected with Varney Air Lines, Inc. in air mail traffic promotion at Spokane, Wash., and later was in charge of all traffic on the Varney Lines. When the management corporation, United Air Lines, Inc., was formed in the early 1930's, Mr. Nourse assisted Mr. Patterson in the development of a statistical department.

This work led him into the field of economic research in connection with Mr. Patterson's equipment and business planning. More recently he has organized for Mr. Patterson a system of budgetary control that has received much favorable comment in air transport circles. He is a graduate of Washington State College and resides in Chicago.

United Holds School

Eight neophyte traffic representatives of United Air Lines have been graduated from an intensive six-day school of training conducted at Chicago by B. B. Gragg, director of sales. The men were drawn largely from United's reservations and passenger service departments and now are being promoted to positions in the traffic department. They are Bob Meyer, J. V. Thorndike, W. T. McIntyre, J. Moulton, Gil Leindecker, Tom Glassford, Al Nelson and Chet Bolinger.

Fast TCA Flight

One of the fastest flights recorded since Trans-Canada Airlines began operating over the Rockies was announced recently when a plane made the 480 miles from Vancouver to Lethbridge in 2 hrs., 10 min. With an 80-mi. tail wind, the ship touched 300 mph. flying at 11,000 ft.

PAA to Treasure Island

Pacific division offices of Pan American Airways were moved to Treasure Island, San Francisco, from Alameda, Cal., recently, according to an official announcement from Col. Clarence Young, Pacific division manager.

KLM Seeks American Pilots

KLM expects soon to employ four more American pilots who have had experience with Douglas Aircraft equipment, used extensively by the line. Some time ago KLM took two American pilots for its services.

American's Collegians

Thirteen of the 25 new first officers employed by American Airlines in Chicago are college men. The pilots come from the following institutions: Yale, Harvard, Purdue, Rowe College, Bradley Tech, Morningside College, Culver Military Academy, Minnesota, North Dakota State, Drexel Institute, Louisiana State and Clemson.

Western Air Express Celebrates 13th Anniversary of First Flight

Western Air Express which claims to be the nation's pioneer passenger airline, on Apr. 17 celebrated the 13th anniversary of its first flight.

On Apr. 17, 1926, C. N. James, now WAE's vice-president-operations, piloted a Douglas M-2 biplane from Salt Lake City to Los Angeles and delivered a package of air mail to Claire Windsor, then a movie star. About a month later, Ben Redman, Salt Lake City businessman, rode to Los Angeles on the mail bags in James' forward cockpit. WAE states that Redman was the first commercial airline passenger.

Today, the company operates AM13, Salt Lake City-San Diego, and AM19, Salt Lake City-Great Falls. During 1939, it hopes to augment its system with service into Lethbridge, Canada, providing connections with Trans-Canada Air Lines. Also, an agreement has been worked out with United Air Lines

for the interchange of sleeper equipment at Salt Lake City, enabling the companies to offer through sleeper service from Los Angeles to New York City. A CAA hearing on the agreement will be held May 1.

"Growth of commercial aviation to its status today as a major business is unequalled in the history of transportation," Western Air Express stated on its 13th anniversary. "In its 13 years of serving the public it has grown to the extent of carrying over 1,161 passengers and 15 tons of mail every second out of 24 hours over systems reaching every important city in the nation."

Western Air's officers, besides James, are Alvin P. Adams, president; Thomas Wolfe, vice-president-traffic, and Leo Dwerlkotte, secretary treasurer. General offices are at Union Air Terminal, Burbank, Cal.

PCA Leases 2 Boeings

Two Boeing 247D's from United Air Lines were delivered to Pennsylvania-Central Airlines on Apr. 15. PCA also announced the opening of a downtown traffic office in room 919, Woodward Bldg., Washington, D. C.

ATA to Meet in Los Angeles

The Air Transport Association of America will hold an Engineering and Maintenance Conference in Los Angeles June 12-14. The purchasing committee of the ATA will meet in LA on June 15.

Wiggin Resigns

F. W. Wiggin has resigned as vice-president and director of Airline Feeder System, Inc., and has been appointed personnel director of U. S. Aviation Exhibit, Inc., the aviation industry's exhibit company for the New York World's Fair.

Completion Date Forecast

Albuquerque, N. M., Apr. 15—Completion of Albuquerque's new airport by May 15 has been forecast by J. Q. Barnes, zone supervisor for WPA. He said he understood TWA would move to the new field as soon as it is ready for occupancy.

Lines at Travel Expo

Nine air transport companies presented displays at The Daily News Fourth Annual International Travel Exposition in Chicago which opened a four-day program on Apr. 27. Lines represented were American, United, Eastern, TWA, Chicago & Southern, Northwest, Braniff, PCA and Pan Am.

AA Opens 2nd Boston Office

W. Nelson Bump, district sales manager for American Airlines, announced the opening in Boston of the line's second ticket office, in Park Square adjoining Hotel Statler's main entrance.

NWA Opens Portland Offices

New offices of Northwest Airlines at 614 Southwest Broadway were opened Apr. 18 in Portland, Ore. with Mayor Joseph K. Carson, Jr. and A. G. Kinsman, general traffic manager, officiating.

Promoted

W. P. Feiten, United Air Lines district traffic manager in Cleveland, has been promoted to a position as assistant to Director of Sales B. B. Gragg at Chicago. Feiten has been with United seven years.



Haueter Elected Continental V. P.

Election of O. R. Haueter as vice-president of Continental Air Lines was announced following a director's meeting in Denver on Apr. 19. Mr. Haueter also will continue as operations manager.

Early flying instruction in June, 1920, was received from Williams-Hill Flying School at Arkansas City, Kan., after which Mr. Haueter barnstormed for Errett Williams and others. From Feb. 1927 to Aug. 1929 he was employed by Alexander Aircraft Co. at Denver and Colorado Springs as assistant sales manager & test pilot, resigning to accept a position as vice-president & general manager of Von Hoffman Aircraft Corp. in St. Louis. He operated the latter company until it was sold in Mar. 1932 to Robertson Aircraft Sales Co.

Mr. Haueter then became a co-pilot with National Air Transport Corp. (now United), then captain until mail cancellations. He then went with TWA in June, 1934 as co-pilot, being promoted to flight superintendent & captain in Apr. 1935, in charge of operations & schedules between Columbus and Albuquerque. He continued in this capacity until he joined Continental as operations manager on Feb. 1, 1938.

New North Beach Tenant

Canadian Colonial Airways will operate three daily schedules from North Beach Airport in New York City as soon as the port is opened, according to announcement by Mayor Fiorella H. LaGuardia on Apr. 1. Canadian Colonial operates to Burlington, Vt. and Montreal, Que. from New York. It is one of the latest tenants signed for the new airport.

New TWA Manager

Appointment of George F. Johnsen as manager of traffic and sales in Minnesota for TWA has been announced by J. A. Thomas, central traffic and sales manager. Mr. Johnsen, a native of St. Paul where he has been active in the air transportation sales field for over seven years, formerly was connected with Northwest Airlines. His new headquarters are in Minneapolis.



Airline Personnel

First officers in training at Chicago by American are Edward Kraemer, Joseph Carter, Vernon Mayfield, Lewis Burns, Alfred Sellmeyer, Wilbur Parish and Neil Wells.

John Griffin, operator of East Coast Airways, Hanover, Mass., has been accepted as first officer by Boston-Maine after having completed a course in the line's pilot training school.

From radio operator at Concord, N. H. to station manager at Manchester, N. H. is the promotion given Charles W. Sangster by Boston-Maine.

R. A. Miller, maintenance supervisor at Glendale for AA, has been transferred to Chicago as supervisor of overhaul. E. Hines, general foreman at Glendale, is assuming Miller's previous duties.

American's First Officer W. H. Dum has been transferred from AM-21, Newark-Cleveland, to AM-7, Newark-Chicago.

Agent Gordon Kennington has been transferred from Boston to the Manchester, N. H. station of Boston-Maine.

Former Boston-Maine agent at Portland, Me., J. A. Zimmermann has been promoted to station manager for the same line at Concord, N. H. Earl J. Miller, TWA traffic representative at Ft. Wayne, Ind., has been promoted to traffic and sales representative in Chicago.

American's city sales manager at Houston for the last two years, Cecil Smith has been appointed chief agent of the reservation and ticket office for the line at Ft. Worth Municipal Airport. He succeeds Al Aldrich who joined Braniff recently and was sent to Houston.

Edwin C. Berbaum, clerk in AA's treasury department, has been transferred to the communications department.

A former radio maintenance man, R. H. Burns, has been moved from Boston to Concord, N. H. as radio operator for Boston-Maine.

Boston-Maine's Concord, N. H. station manager, Harvey Stone, has been transferred to the line's Boston office.

William Hinton, American first officer, has been transferred from AM-7 to AM-21.

First Officer Earl K. Ellise, American, has been transferred from AM-18 to AM-21.

Fred Lane of New Canaan, Conn., graduate of the Boeing School of Aeronautics, has been accepted as agent in training by Boston-Maine at Portland, Me.

A new draftsman in American's engineering department is Edward F. Cisar, Junior Engineer Bruce K. Carig, Jr. has resigned from AA to join Consolidated Aircraft.

W. F. Calliott has been named head of AA's statistical section of the treasury department. He formerly was in charge of cost records in the department.

John Kohler has been promoted to passenger agent at Cheyenne for United, having served as steward at that place.

Kenneth Wolfe has been named statistician for WAE.

In the travel business since 1924 Graeme S. Gibson has been appointed traffic representative for TCA at Vancouver.

Dick Richards of Rochester, N. Y., has joined Braniff as co-pilot. He has been a flyer since he was 15, and at 21 has 1,470 hours to his credit.

TWA has employed Bethelia Rutherford of Anthony, Kan. to be a hostess, to be based in Kansas City. She is a graduate of Wesley Hospital, Oklahoma City.

With PCA for three years, John L. Murphy has been appointed station manager for the line at Milwaukee, replacing Carl Rotter.

J. E. McLaughlin has been stationed at Edmonton as chief engineer for Trans-Canada. With TCA for six months, he formerly was with Starratt Airways Ltd.

Two new WAE co-pilots are George Ryan, formerly with California Aerial Transport, and Lane W. Smith of Salt Lake City. Smith has had flying experience in Central America. Ryan also served Gage Flying Service and Wilmington-Catalina Airline.

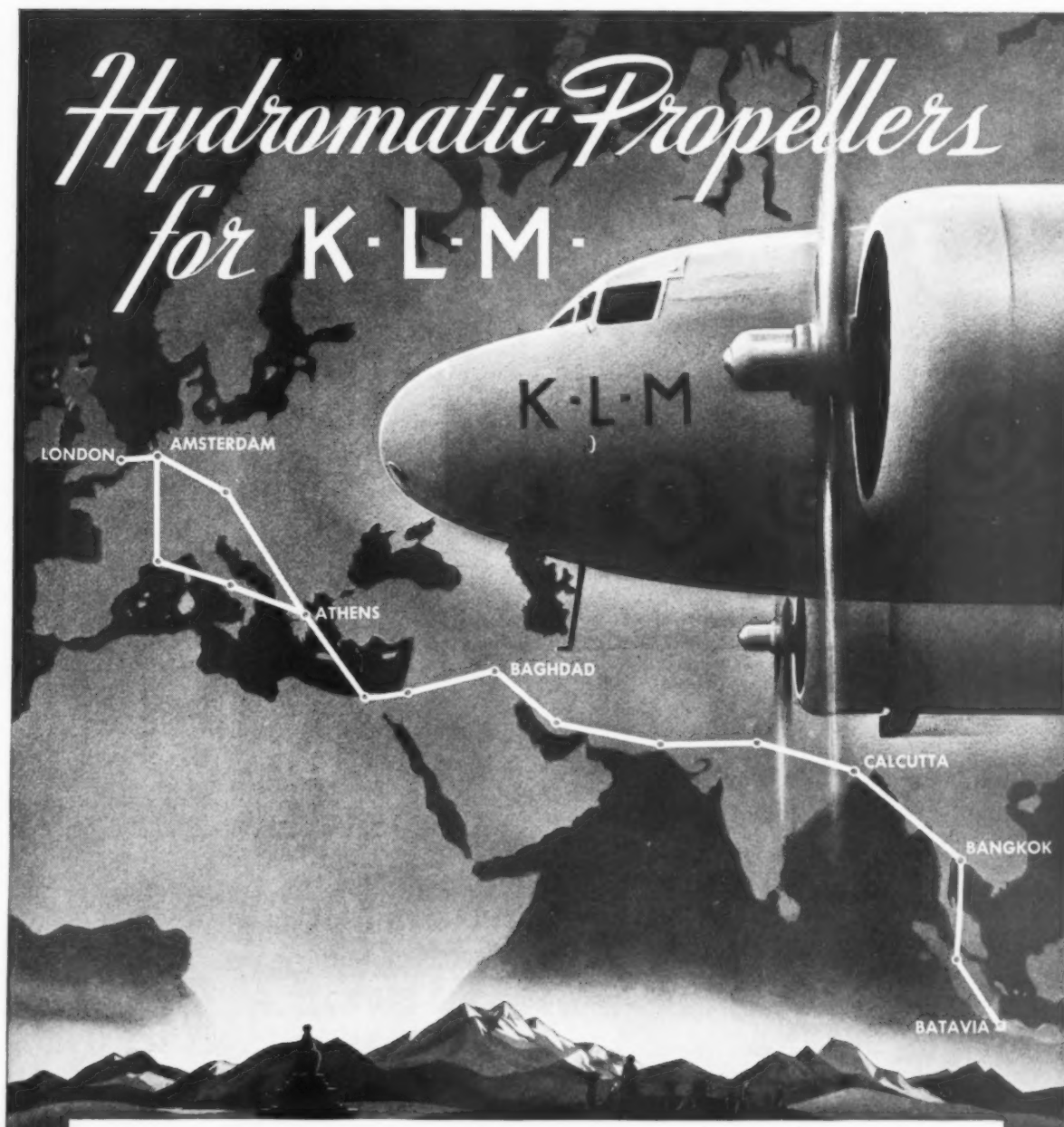
Married in LA

American Airlines' Stewardess Agnes Spence and O. D. McKenzie, registrar of Curtiss-Wright Technical Institute were married in Los Angeles on Apr. 12. Mrs. McKenzie had been flying Glendale-Dallas. McKenzie is a lieutenant in the National Guard Reserve Air Corps.

February Express Gains

Gross revenue from air express on a nation-wide scale for February increased 26½% over Feb. 1938. Railway Express Agency has reported.

Hydromatic Propellers for K-L-M.



Since the beginning of its operations over one of the world's largest and most important air routes, K. L. M. (Royal Dutch Air Lines) has equipped every airplane in its service with Hamilton Standard propellers. Through the years, each new Hamilton Standard development has contributed its

share to K. L. M.'s outstanding operating record.

Now, for its modern fleet of transport airplanes, K. L. M., like other leading air lines of the world, has selected Hamilton Standard's latest achievement, the Hydromatic quick-feathering propeller.

HAMILTON STANDARD PROPELLERS

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UNITED AIRCRAFT CORPORATION • EAST HARTFORD, CONNECTICUT

Fair Exhibit



Among exhibits in the transportation building at the San Francisco Exposition is a joint display of United Air Lines and TWA, pictured above. Details were worked out by Steve Stimpson, regional traffic manager of United, and Ernie Smith, district traffic manager of TWA. As an added feature for the exposition United is making \$3 educational flights daily from Mills Field, the 30-minute tour taking passengers over the fair and San Francisco's famous bridges.

BRYAN CHIEF PILOT

TWA Promotes Million-Miler to Top System Post

Capt. Otis F. Bryan, 10 years a pilot for Transcontinental & Western Air and a million-miler, has been appointed chief system pilot, according to announcement by Larry G. Fritz, vice-president in charge of operations.



Bryan replaces Harlan Hull who was killed in the crash of the Boeing 307 at Alder, Wash. Trained in the Army Air Corps, Bryan received his instruction at March and Kelly Fields. He has a total of more than 9,000 hours in the air and has flown approximately 1,500,000 miles. As chief pilot he will supervise the selection and training of TWA first officers and conduct research and instruction in general piloting technique.

Expert with gun or rod, his chief interests outside of pilot-engineering studies are trap and live pigeon shooting. A graduate of the University of Indiana, he is married and has two children, Otis Frank Bryan, Jr., 4, and Beverly Bryan, 2. He will be based at Kansas City.

Army's Experimental Planes

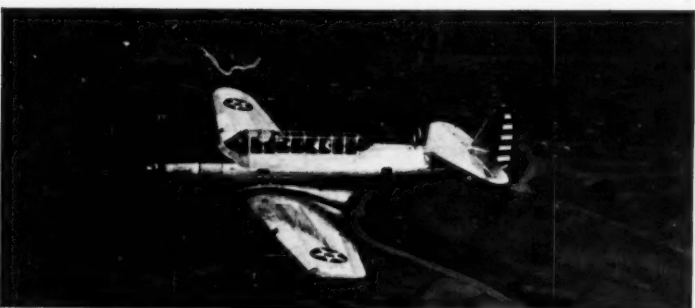
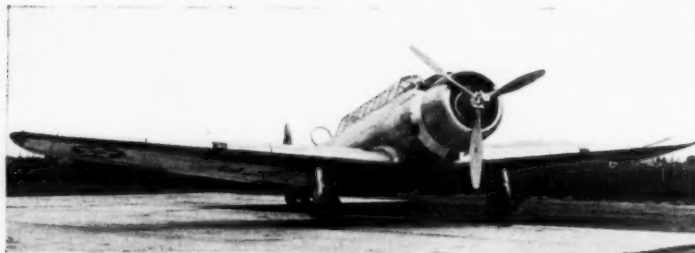


One of the two new experimental pursuit planes purchased by the Army is the XP-39, made by Bell Aircraft Co. of Buffalo, N. Y. The fighter represents a considerable departure over its predecessor pursuit types in that it has a tricycle type landing gear, retractable in flight. It is armed with two machine guns, has a wing span of 35 ft. and a length of 25 ft. A single-seater of all-metal construction, it is powered with a single Allison supercharged 12-cylinder engine rated at 1,000 hp. Propeller is of constant speed type, and the canopy over the heated cockpit is of new design, providing a side door instead of conventional top sliding panels.



The second experimental plane, made by Seversky Aircraft Corp., Farmingdale, L. I., N. Y., has been designated the XP-41. It is a single-engine plane powered with Pratt & Whitney double-row engine. A single-seater, it has a wing span of 36 ft. and a length of 27 ft., 7 ins. It is of all-metal construction, with flush-retracting landing gear. The XP-41 carries two machine guns. Both planes now are at Wright Field, Dayton, O.

New Vultee Army Attack Bomber



Three views of the Vultee YA-19, all-metal attack monoplane delivered recently to the Army Air Corps. It is powered by a Pratt & Whitney "Twin Wasp" 14-cylinder radial air-cooled engine and carries a crew of three and attains a speed in excess of 230 miles per hour. It carries 600 pounds of bombs and six machine guns.

Joint Seaplane Base Project Underway; 51 Floats Ordered

The CAA-NYA nationwide seaplane base project is underway, with arrangements having been concluded for installation by NYA of 51 floats in New England and New York City, according to recent announcement by the CAA.

Six installations have been requested by Boston and 15 by Connecticut, 10 of which will be located along the seacoast and five on inland waterways. New York City, with three seaplane landing areas already functioning, has contracted for 30; 10 to be installed at the Wall Street Skyport, 14 at 23d St. and East River, and six at Floyd Bennett Field.

It also was announced that Capt. Robert S. Fogg has been appointed seaplane consultant in the CAA's airport development section. He is holding conferences with local NYA officials in Virginia, North Carolina, South Carolina, Georgia, Florida and Louisiana. By midsummer it is expected that there will be seaplane bases established every 150 miles along the Atlantic seaboard from Maine to Florida, and on the Gulf of Mexico.

Under the project (AMERICAN AVIATION, Apr. 1), the CAA provides drawings and plans, the NYA provides the labor and some material, and the sponsor, which must be a city, county or state government, furnishes necessary lumber. The 10' x 20' wood floats, which will be supported by steel drums, will cost less than \$100 each. When completed, they become the property of the sponsoring agency.

Hamilton Standard Promotions



Promotions at Hamilton Standard Propellers Div. of United Aircraft Corp., East Hartford, Conn., were announced last issue. Here are the men advanced. Left to right: H. M. Ellis, new west coast representative; Samuel P. Crago, appointed assistant sales manager to succeed Ellis at East Hartford; Carl F. Baker, appointed assistant chief engineer, and John L. Brown, Jr., who was named assistant factory manager.

Loening Urges 1st Class Mail Service Across Atlantic With Landplanes

Use of landplanes for the carriage of all first-class mail across the Atlantic at a charge of five cents per letter was advocated on Apr. 18 by Grover Loening, aeronautical consultant for the Chase National Bank, New York City, and one-time aviation adviser to the U. S. Maritime Commission, at Pan American Airways' CAA hearing for a certificate on the Atlantic and the setting of a mail rate for the service.

Appearing as an "interested party," and neither favoring nor disapproving Pan Am's application, Loening told CAA members Harlee Branch, G. Grant Mason, Jr., and Oswald Ryan that no trans-Atlantic operator should carry anything but mail for the first one or two years, thus enabling the service to be founded on sound economics. Loening stated that he understands the British plan to carry all first-class mail by air across the Atlantic and warned that an American service charging 25c per half-ounce could not cope with this competition.

Pan Am, or any other operator with similar equipment, could carry 2,400,000 lbs. of first class mail per year (12,000 lbs. per trip, 200 trips per year) if nothing but mail was carried in the planes, he stated. At five cents per letter, 40 letters to the pound, the government would collect \$4,800,000, while paying the carrier \$4,700,000, which is approximately the total requested per year by Pan Am. Thus, Loening said, the only subsidy involved would be the transit charges on the mail at the end of the line.

Discussing Pan Am's request for \$4,700,000 per year, Loening stated that "this is no trivial cost," and pointed out that in 1938 the U. S. paid only \$300,000 to all American-owned shipping lines for carrying first-class mail. He further pointed out that in the past 10 years the Post Office has paid \$62,000,000 on foreign air mail and has collected only \$18,000,000 revenues.

Definite ideas on landplanes vs. flying boats, and also minimum per-

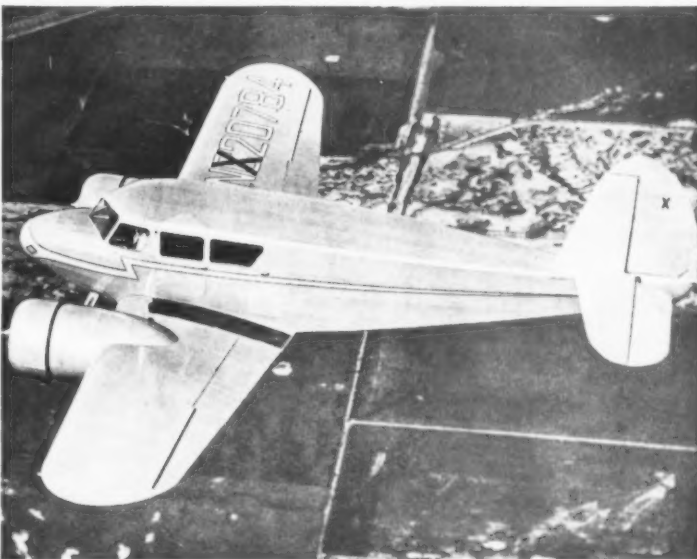
formance figures for a trans-oceanic plane were presented by Loening. "The flying boat is subject to a good deal of questioning," he said, emphasizing that the added safety of such craft is now disputed. "The United Air Lines accident off Point Reyes has made us stop and think," he stated. Had the passengers remained in the plane's cabin, they not only would have been saved but would not even have been wet, he added. This has led to the conclusion that a low-wing monoplane may make a very satisfactory raft, Loening said.

The U. S. Maritime Commission's 1937 report, which he prepared, favored flying boats, Loening admitted, but stated that many aspects of the report have now been changed. There were no airports suitable for landplanes in trans-oceanic service in 1937 whereas Baltimore, North Beach, Le Bourget and others are now available.

"We have arrived at the conclusion that no trans-Atlantic operator is ready to fly the Atlantic with passengers, or even mail, until he has a plane with a minimum cruising speed of 200 mph. and a minimum range of 5,000 air miles," Loening told the Authority. Although he did not indicate whether this should be a landplane or a flying boat, he stated after the hearing that he favored the former. He emphasized the fact that no landings should be made at any intermediate points on a trans-Atlantic service, because such stops add to expense and delay. No service to England or France should take over 20 hrs., he said. Fixed overhead, Loening stated, only decreases slightly as the number of schedules increases, but shows a big drop as the number of stops decreases.

It was pointed out to Loening by Henry J. Friendly, Pan Am attorney, that if a U. S. carrier were to transport nothing but mail for the first one or two years, foreign operators would be enabled to start passenger service first. Loening stated that this

New Twin-Engined Cessna T-50



Two views of the Cessna T-50 which factory pilots are now testing at the company's plant at Wichita, Kan. Company officials reported after first flights that "its performance and flying characteristics exceeded all expectations and tests conducted indicate that the new model will obtain its 193 miles per hour cruising speed without difficulty." The ship is expected to be ready for CAA tests in May. Designed to sell in the \$20,000-\$25,000 price bracket, the T-50 is powered with two 225 hp. Jacobs engines, has a seating capacity of five persons, an expected cruising speed of 193 mph.; landing speed estimated at 55mph. and a service ceiling of 22,000 to 25,000 feet. Its climb the first minute is given as 1,500 feet. Gross weight is 5,000 lbs., wing area is 296 sq. ft., and wing span 42 ft.

Progress at North Beach Airport



Airview of the \$28,000,000 North Beach Airport being rushed to completion at New York City. The three hangars at right will be occupied by American Airlines. The circular building on the left will house the airport and airline administration offices. The parkway in the background provides quick access to mid-town Manhattan.

Sells Delta



Oscar Bergstrom, district traffic manager for Delta Air Lines at Atlanta who has made his sales quota every month for a year and who is well known in the southeast as one of the most live-wire traffic men in the industry. Many of his sales ideas have found their way into Delta's traffic-building program.

would make no difference, that the U. S. line should wait until it can operate such a service "safely, successfully and economically." He added that the foreign companies "would only be that much poorer."

PILOT VIOLATIONS

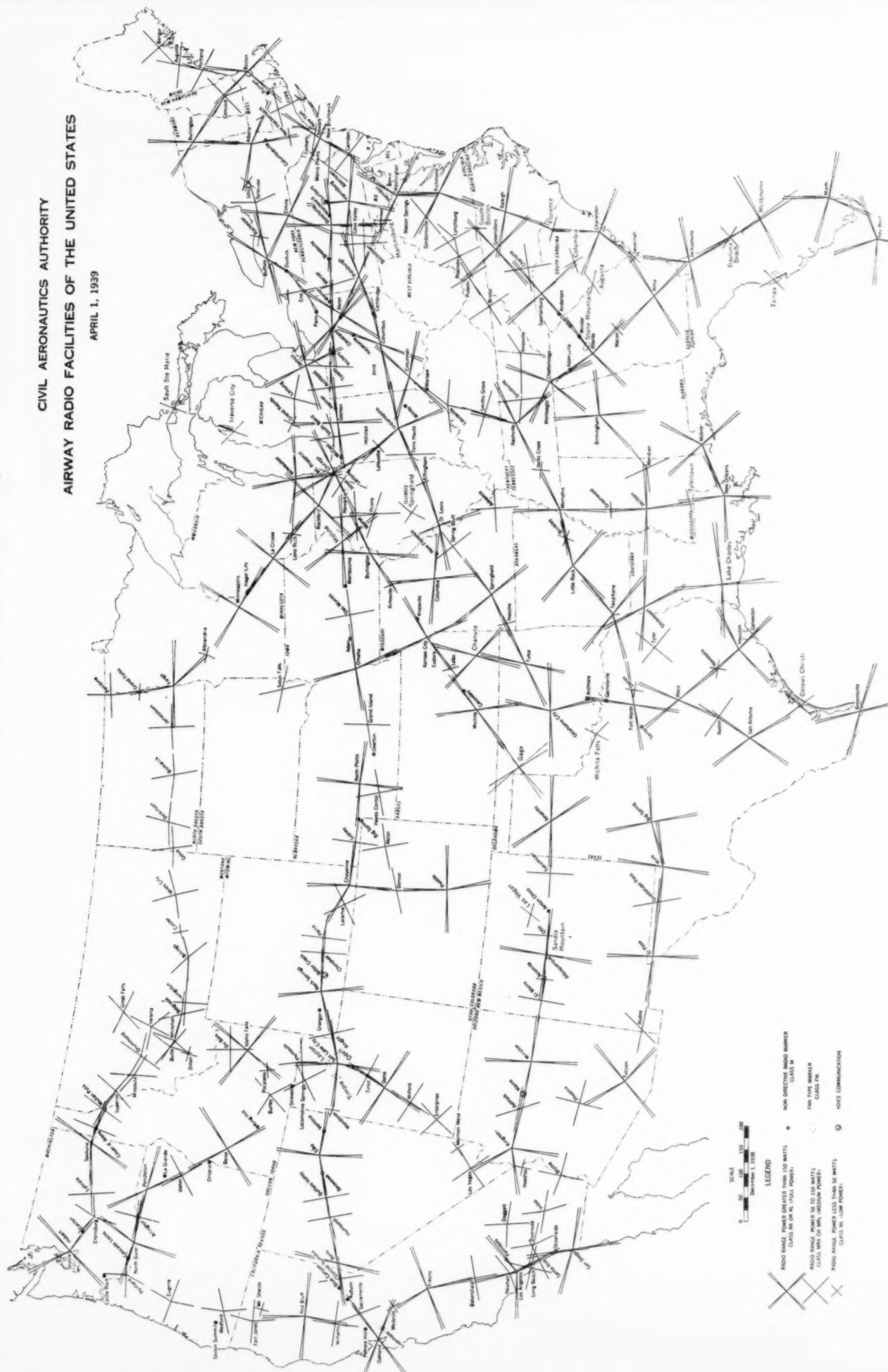
Two Airmen Ordered to Show Cause Why CAA Should Not Revoke Licenses

The CAA has ordered Norman J. Leavitt, solo pilot, to appear on May 2 at the Authority's regional office at Santa Monica, Cal. to show cause why his license should not be revoked or suspended. On Mar. 6, 1939, Leavitt took aloft a person other than a certificate instructor, and navigated his plane at an altitude of less than 500 ft., the CAA alleges.

There is also probable cause to believe that Samuel H. Giberson is not competent to perform the duties of a limited commercial pilot, the Authority states. On Dec. 11, 1938, Giberson is said to have departed from Denver without sufficient fuel and oil to arrive at the point of his first intended landing. He also is charged with flying over a congested area at less than 1,000 ft. altitude. No date has been set for his hearing.

How the Airway Radio System Looks Today

CIVIL AERONAUTICS AUTHORITY
AIRWAY RADIO FACILITIES OF THE UNITED STATES
APRIL 1, 1939



With the completion Apr. 1 of the CAA's \$5,000,000 radio modernization program, the nation is virtually covered with navigation facilities. During the coming year a few more vital gaps will be filled. Note comparative map for 1932 on opposite page.

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Radio Program Completed

(Continued from page 1)

Rouses Point via Burlington; the Washington-Pittsburgh airway was rebuilt and realigned; lights were extended from Augusta, Ga., to Charleston, S.C.; an airway was built from Corpus Christi to New Orleans via Houston, and from Omaha to Sioux City, from Amarillo to Fort Worth, from Albuquerque to Pueblo and from Cheyenne to Billings. A 100-mile section of the Los Angeles-Salt Lake City airway was rebuilt and the Pendleton-Spokane airway was re-directed via Walla Walla instead of by Pasco. Teletype systems were installed on these airways where none previously had been built.

On July 1 Stanton will launch a new \$7,000,000 program, \$2,000,000 of which is contract authorization provided last year and for which detailed plans have been made. Under this program the following will be accomplished.

Installation of airways aids on the following airways: Omaha-Bismarck, 471 miles; El Paso-Albuquerque, 255 miles; Tulsa-Kansas City, 216 miles; Billings-Great Falls, 190 miles; Bangor-Caribou, 140 miles; Dayton-Cochran, 143 miles; Baltimore-Buffalo, 298 miles; and Huron-Minneapolis, 256 miles. Total cost, \$1,237,100.

Relocation of airway aids on the Tucson-Rodeo leg of the Phoenix-El Paso airway. Cost: \$90,000.

Purchase and installation of ultra-high frequency radio station location markers to complete all vertical radiator type radio range stations, 65 stations. Cost: \$162,500.

Installation of one additional simultaneous radio range station. Cost: \$44,000.

Installation of three medium and low-power radio ranges on existing airways. Cost: \$87,000.

Two additional teletype weather-reporting stations on existing airways. Cost: \$11,200.

Installation of 55 stand-by radio transmitters at existing radio stations. Cost: \$330,000.

Two substantial jobs have also been completed. One is the installation of 150 gasoline engine-driven generators for which contracts were let last September. These are to provide stand-by power in the event of failure of commercial power at radio range stations. A failure in the electric power automatically starts the gasoline engine gen-

erator, actually cranking the engine and throwing all necessary switches. When the electric power comes on again the gasoline engine will not switch off for 10 minutes.

Another job has been the installation of 100 ultra-high frequency cone of silence markers. These have been placed on 80 of the new simultaneous range stations and on 18 out of the 50 older type stations which have now been modernized. The United station at Denver and the new station at Hartford also are equipped.

The ultra-high development program is the center of much interest since it has become recognized that ultra-high frequencies have many advantages over the low-wave frequencies now in general use. For one thing the ultra-highs are devoid of static.

Three ultra-high transmitting stations are now in operation on an experimental basis, at Pittsburgh, Indianapolis and in California. Tests to date have revealed no multiple courses, a recognized fault in some of the existing stations. Tests also have indicated so far that the 63 megacycle band (63,000 kilocycles) is much better than the 126 megacycle band on which experiments also have been made.

Stanton has purchased six receivers for the 63 megacycle band. Two of these are retained by the CAA and four have been loaned to American Airlines and TWA for comparative purposes. As soon as the experiments are completed the next step will be to try out ultra-highs on a complete section of an airway.

Four leading airlines have suggested that the New York-Chicago direct airway be used for the trials. Terrain on this airway is representative and heavy traffic by non-stop American and TWA schedules and by all United schedules will provide ample comparative data. Eight ultra-high stations will be erected at a total cost of \$200,000. The three lines using the airway will equip six to 10 planes each with necessary equipment.

Four Pilots and the Boss



An informal photo taken Apr. 5 at Atlanta on the night Eastern Air Lines' inaugural flight DC-3 cleared for Brownsville, Tex., thence to Mexico City. Left to right: Capt. C. Earl Potts; Capt. Larry Pabst, assistant supt. of operations; Capt. E. V. Rickenbacker, Eastern president; Capt. E. A. Barber, and Capt. Gene Brown. At the moment the picture was taken the group was talking about the little old lady who, when she boarded an EAL plane recently at Houston, stepped up to the pilot with a demanding air, asking: "Young man, have you soloed yet?"

It is hoped that contracts can be let not later than September with construction completed in January of 1940. Airline pilots will be instructed to use the stations as much as possible, although they can always revert to the standard airway facilities. In many instances the pilot will probably use one system and the co-pilot the other in order to obtain the necessary data. After an extensive trial period the CAA will then embark on a program of using ultra-high for all new stations and then changing all existing stations to ultra-high providing the tests are successful.

Ultra-high signals do not reflect downward along the curvature of the earth's surface as do the lower frequency waves. The beams go straight out like light rays. For this reason stations must be reasonably close together, but the redeeming features of ultra-highs are the lack of static, the apparent lack of multiple courses and the lack of reflection characteristics by which pilots in the southeastern United States can hear stations as far away as Seattle. The ultra-high stations will be placed at intervals of about 90 to 110 miles.

Col. Evans 'Pleased' With Airport Report

Col. Floyd B. Evans, director of the department of aeronautics for Michigan and former president of the National Association of State Aviation Officials, has expressed himself as "generally pleased" with the airport report submitted to Congress by the Civil Aeronautics Authority but cautions that Congress must act in order to make the program effective. Col. Evans has been one of the leading advocates of federal aid for airport construction.

"I am personally generally pleased with the CAA airport report to Congress," he said. "I am disappointed that the CAA did not see its way clear to recommend some maintenance, however, I feel that if the recommendations as made are approved by Congress that we will have a commendable start toward the ultimate national airport program. Handling the construction work through relief agencies as originally contemplated is not, of course, too satisfactory, but here again I think that if we can get a start through the relief agencies that the work will be carried along satisfactorily during the initial period of the program.

"Unless Congress does do something very definite in aiding further construction I feel very definitely that we are going to come to a very abrupt ending to the present program that is being conducted strictly through relief agencies at the present time.

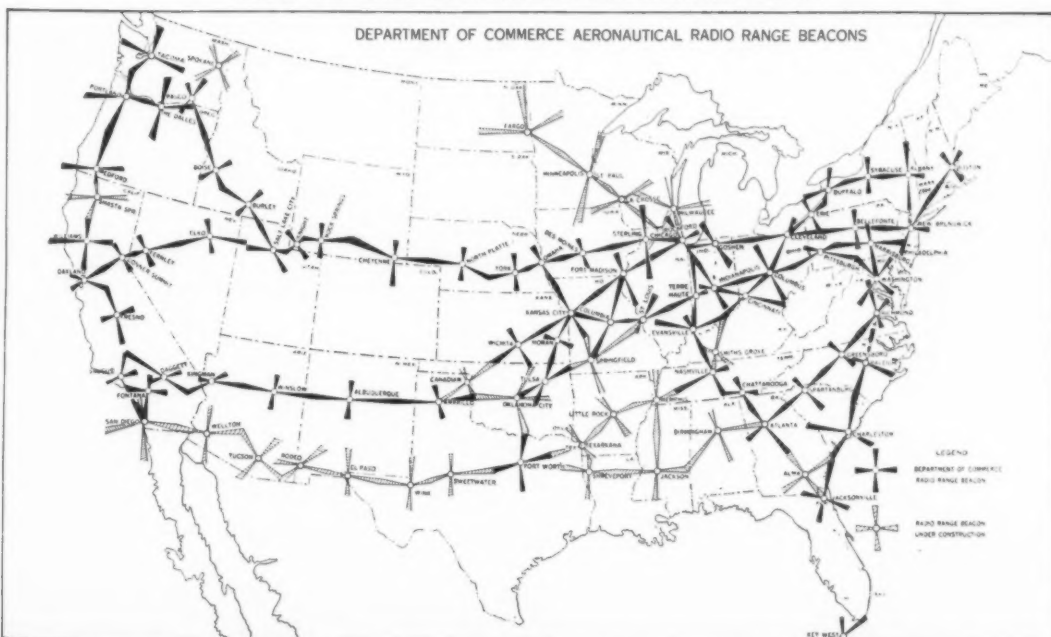
"Local communities are getting nearer and nearer to the point of absolute inability to contribute further toward construction work. Direct federal aid is, in my opinion the only solution to this problem.

"I think that if the recommendations of the CAA in regard to allocation of funds to the states is accepted by Congress that it will be an incentive for many states to take an active part in the program and will find ways and means to finance a good program in order to qualify for federal aid."

W. Va. Inspector Reports

Charleston, W. Va.—Inspector Hubert Stark of the state aeronautics board has reported that large airline transport planes can make commercial use of only five of West Virginia's 38 airports. The five are at Huntington, Clarksburg, Elkins, Parkersburg and Charleston. Wheeling and Morgantown ports, now under construction, will increase to seven the number eligible for CAA approval, Stark said. He reported that 20 fields are used commercially and 18 are emergency fields. Ninety-nine registered aircraft in the state were noted.

How the Radio Network Looked in 1932



The above map is dated Sept. 1, 1932. Only one transcontinental airway was actually complete with radio facilities. The shaded stations mark construction work in progress at that time.

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Fortnightly Review

(Continued from page 1)

Mr. Hinckley's past associations with aviation have been sufficient to provide a working basis for his present thinking. And his present thinking reaches encouraging heights. He believes that somehow or other aviation has either "missed the boat" or the vagaries of a slow-moving democracy have permitted aviation to lag behind in the United States. His vision is international. He has observed the tremendous strides made in Germany and notes that Germany has progressed swiftly aeronautically within an area smaller than the area of our own state of Texas, with half of our nation's population and with a fraction of our natural resources. He believes the time is here for intelligent expansion in all aviation; he strongly believes the government should assume the major responsibility. But he believes also in expanding in the American way. In pilot training he favors stimulation of civilian flying by partial federal aid which in turn will stimulate manufacturing of private-owner airplanes. The test of this theory is yet to be determined but at least the chairman of the CAA thinks and acts in a fashion commensurate with the size of the nation and the potentialities of a great new mode of transportation.

As for Edward P. Warner whom the President has nominated to fill the vacancy, we have only high praise. Our readers may recall that we mentioned Mr. Warner as a leading possibility for the Authority almost a year and a half ago—long before the CAA actually was created. Internationally known as a scholar, an economist and an engineer, Mr. Warner will provide a technical balance to the Authority which has been badly needed. His background has a depth unequaled among those in aviation today. He was an assistant secretary of the Navy in charge of aeronautics; he was the editor of an aviation trade magazine; he was vice chairman of the Federal Aviation Commission, and has had long contact with all branches of the industry. There are fears that perhaps Mr. Warner's uncompromising and precise weighing of all the facts in every aeronautical problem may tend to delay quick action in the Authority, but we hope this does not turn out to be the case. Everything considered, the President could hardly have made a more sound appointment.

Brains and Free Enterprise

THERE is no transportation problem in the United States that brains and our American system of free enterprise cannot solve. Brains, free enterprise and private capital are today making available to the public a vast system of fast air transportation for passengers, mail and express.

The Civil Aeronautics Authority is currently called upon for constructive regulatory brain-work in providing an improved plan for giving fair and reasonable air mail compensation to all airlines. As the air mail using public has been pouring into the Post Office Department cash

drawer, annually increasing revenue from the purchase of postage, the CAA can readily visualize the growing economic demand for air mail transportation.

The annual statements of the airline operators will reveal the cost of air mail transportation. With figures covering economic demand and recent annual costs, the brains of the CAA should work fast on this particular problem.

But the air mail is only one problem and while the CAA is working on that, the brains of airline management should be working on passenger and express service expansion. On the radio program, Town Hall of the Air, Sen. Burton K. Wheeler recently said, "People want to travel and will travel if the cost can be brought within their means." He continued: "Management has spent too much time in Wall Street and too little time in the main streets of the towns they serve."

Sen. Wheeler was talking about the railroads, but there is a tip in it for wise young airline operators.

The American public wants air transportation and it can be furnished in volume and at a reasonable popular price.

Loyal Irishman

SEN. PAT MCCARRAN deserves a genuine vote of thanks from aviation for his successful fight in the Senate for the NACA Sunnyvale laboratory appropriations. The cause had all but been given up as hopeless for it is rare that funds can be restored on the floor after having been turned down by both Senate and House committees. Of course the funds must yet weather the Senate-House conference committee's approval but the fight is far from lost now. This is not the first time that Sen. McCarran has proved his interest in and loyalty to aviation and it is not the only time that he has been the only senator to really fight to the very last. Credit should also go to Sen. Carl Hayden of New Mexico, the California senators, and others on the outside who expended great effort for this to aeronautical development.

The Airport Report

PERHAPS it is because we didn't have our hopes too high in the beginning that we were favorably impressed by the airport report and recommendations submitted to Congress by the Civil Aeronautics Authority. In common with almost everyone in aviation we have not yet had an opportunity to read the full report. The summaries released late in March indicate, we believe, a fair and practical appraisal of the airport problem considering the scope of the report requested by Congress, the short amount of time permitted to conduct the survey and draw up conclusions, and last but not least, the current economy-minded attitude of Congress.

Our own observations indicate the complete impossibility of obtaining a permanent federal aid program for airports in the present Congress. The CAA itself is all too aware of the difficulties of obtaining even routine funds from the current session. We believe, then, that the CAA reached sound conclusions when it recommended three alternate programs and left the problem in the hands of Congress—but with a practical short-cut provided for immediate needs by the use of relief and public works funds. Since a permanent program is not in the cards for this session, the next best solution is the use of WPA funds for the next year to work on the first of the three stages of the ultimate airport program as recommended by the CAA.

There are some who have pointed out shortcomings in the CAA report. These criticisms have revolved principally about the lack of recommendations for maintenance. Perhaps the full report goes into this matter. Perhaps the CAA does not feel it wise at this time to recommend that the Federal Government undertake the expense and responsibility of maintaining the landing areas. It is a large question not easy to solve.

Of course it is not at all certain that \$125,000,000 will be earmarked in next year's WPA appropriation. But it is reasonably certain that if Congress provides adequate funds for WPA that airports will come in for a substantial amount. Meanwhile the airport problem still remains. All that has been accomplished, actually, is the preparation for the first time of a comprehensive national study and the submission to Congress of recommendations by a federal agency. It is a step, a necessary step, but only one of many necessary to bring about a permanent federal aid program. We all know that relief money is only an expediency; we all know that this is not the way to build airports. Also we know that one of these days relief funds will be cut short and airport building suddenly will cease. Municipalities, state aviation officials, commercial operators and private pilots, will have to double their efforts to promote a permanent federal policy. A government agency can only recommend; its promotional activities are limited. We hope, however, that the CAA will sponsor a building program to the fullest extent of its powers.

Pro, Con and Otherwise

To the Editor:

The lull of convention is such that I wonder how many give a thought to how the "missing link" of aviation could prevent such horrible accidents as for example that just witnessed in the middle west.

The temptation of custom is such that I wonder if, when, and how publications can bring themselves to plug for something that many laugh at.

I refer to nothing else but the rotating wing, which has the benefit and honor to be placed generally last on the list of important developments. But isn't that the usual human nature? Take a look at history.

The only thing which can reduce power requirements to a point where maximum reliability can be obtained from the engine, is a practical application of the gyro. The only thing which will eliminate the abnormal fuel requirements and large tanks with their many chances of leakage, is the gyro.

The whole thing hinges on the question: is there any such thing as a practical combination of airplane and gyro? And the answer is "yes."

The usual story pictured by history is pretty dependable: The inertia and lull of convention; the general state of mind by man's many misunderstandings and misconceptions. In a word: human nature.

However I take this opportunity of writing you to express my interest in your reporting of aviation news. As well, I cannot help but see, and wonder to what extent you are tempted by, the powerful influence of custom.

Gordon B. Jackson,
Brooklyn, N. Y.

Obituary

EDNA GILLILAND, 43-year-old aviatrix, died at her home in Los Angeles on Apr. 5. She was a member of the 99ers and competed in the 1932 National Air Races.

CAPT. HUGH L. WILLOUGHBY, co-founder of the Aero Club of America and designer of the War Hawk, died Apr. 4 at his home in Port Seaway, Fla., at the age of 82. He assisted at Orville Wright's first plane flight in 1908 in Washington and is believed to have taken the first aerial pictures of Philadelphia in the same year. He held a patent on "double rudders with inverse and simultaneous action."

WALTER J. FRIEDLANDER, president of the Aeronautical Corporation of America, makers of Aerocars at Lunken Airport, Cincinnati, O., died at his home in Cincinnati on Apr. 19 at the age of 64. He was a former vice-president of the Cincinnati Reds baseball club.

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Signing a Pan American License



Following an agreement between the U. S. and Great Britain for the common use of the islands of Canton and Enderbury in the South Pacific Ocean for international aviation and communication, Secretary of the Interior Harold Ickes (on right) signed on Apr. 13 a license permitting Pan American Airways to use Canton Island as an air base for its projected trans-Pacific service between San Francisco and New Zealand. Secretary Ickes is shown presenting the pen to Juan Trippe, president of Pan American, after the signing. (Copyright by Harris & Ewing).

Trans-Canada Flights Over Maine Approved

Approval of Trans-Canada Air Lines' application for permission to fly 144 miles non-stop across Maine on flights between Montreal and Moncton was submitted by the CAA to the State Department on Apr. 7. The route to be flown is in a direct line between Legantic, P. Q., and Blissville, N. B.

In approving the application, the CAA stated that TCA was not to deviate from this route except in case of emergency, and was subject to all applicable statutes, regulations and air traffic rules of the U. S. and state of Maine. The CAA may terminate the authorization as the public interest may require.

TCA has not indicated when it will inaugurate service over Maine, and the CAA has requested information on aircraft, airmen and schedules. No new reciprocity for U. S. airlines is granted by approval of the application.

Busman's Holiday



Arthur Beggs, western sales manager for American Airlines, is shown after his arrival at Honolulu Mar. 30 and one gathers that everything was just about under control. He took a busman's vacation by flying on the new Boeing 314 to Hawaii.

Judge Dismisses Nuisance Charge

Louisville, Ky., Apr. 15.—Trial Commissioner J. Ward Lehigh recently dismissed a common nuisance charge against Charles O. Parrish, co-proprietor of Shawnee Airport, and terminated the action which was said to have resulted from "neighbors not wanting planes around," according to Defense Attorney J. E. Hutchins. Flyers trying to use an "undersized field" was the reason given by County Attorney Lawrence S. Grauman for the trouble.

Judge Lehigh declared that "operation of an airport and student flyers' training school is a lawful and worthy enterprise; one which may be a source of protection in the future" and added "all things that go up must come down," and damage to property caused by planes from the airport might be defined as accidents.

Testimony of plaintiffs included stories of planes passing so low as to make cattle and mules nervous. William Lichteig testified that pilots once dropped a dummy in a parachute, which failed to open, into his cauliflower patch. "If I hadn't been there to drive away the crowds attracted by the falling dummy, my patch would have been destroyed," he said. Because a plane passed so low over Brady Whitlow that he could have touched the landing gear, his mules nearly ran away, he asserted. John Seibert said a plane had frightened his chickens from a neighbor's farm.

Pilots claimed that their altitude had never been less than 50 feet over the surrounding farms.

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NEW JERSEY

CAA RECORD

(Applications, Hearings, Dockets)

APPLICATIONS

TWA Asks Cincinnati Stop

TWA on Apr. 12 filed application with the CAA for amendment to its certificates of convenience and necessity to add Cincinnati as an intermediate stop for mail, passengers and express between Newark and "the terminal points Phoenix, Los Angeles and San Francisco." TWA has requested certificates incorporating the above termini. Cincinnati, the application states, is 53 miles south of the airway flown between Columbus and Indianapolis. In 1935, TWA asked permission to stop at Cincinnati, but the Solicitor of the Post Office Department ruled that the authorization was not permitted under the Air Mail Act of 1934.

National Seeks Extension of AM31

National Airlines on Apr. 15 filed with the CAA a petition for amendment of its certificate of convenience and necessity on AM31 so as to extend the route from Daytona Beach into Jacksonville. AM31 now operates between Daytona Beach and Miami and National's other route, AM39, between Jacksonville and New Orleans. Purpose of the applications is to connect the two routes, which, the company states, would result in a more economical operation. The amendment "would provide a connection with AM39 at Jacksonville and thereby eliminate the necessity of ferrying between Daytona Beach and Jacksonville, the eastern terminus of AM39, and maintaining an additional base of operations at Jacksonville, which, among many other expenses, would necessitate purchase of additional aircraft," National says. "Either of these alternatives is an uneconomic and undesirable method of operating AM31 and AM39 and is not in the public interest."

Delta Asks New Route

Delta Air Corp. on Apr. 19 filed application with the CAA for a certificate of convenience and necessity to operate mail, passenger and express service between Cincinnati and New Orleans via Lexington, Knoxville, Chattanooga, Birmingham and Meridian. Part of the proposed route coincides with the company's present AM24 and part of it with a Cincinnati-Atlanta operation for which Delta has filed application. Flights over the proposed route will be day, visual contact until aids are installed.

Eastern Asks New Route

Eastern Air Lines on Apr. 25 filed application with the CAA for permission to conduct mail, passenger and express service between Nashville and Muscle Shoals (Sheffield-Tuscumbia).

HEARINGS

United Hearing in Progress

As this issue went to press, United Air Lines' hearing for mail payment on a pound-mile basis was in progress before the CAA. Complete details will be carried in AMERICAN AVIATION, May 15.

Pan Am Trans-Atlantic Hearing

Pan American Airways' CAA hearing for a trans-Atlantic certificate of convenience and necessity, setting of a mail rate for the service, and determination of mail compensation on the Bermuda route, concluded Apr. 22. Complete details on pages 6, 17 and 23.

Erie Isles Hearing Postponed

Erie Isles Airways hearing, scheduled to have been held before CAA Examiner R. J. Bartoo on Apr. 25, has been postponed for 90 days. The company had requested a "grandfather" mail, passenger and express certificate between Isle St. George and Port Clinton, O., via Middle Bass, Put-in-Bay and Kelley's Island. Mail has been carried over the route by Erie Isles under a star route contract, and the Post Office is planning to readvertise the line under the "experimental" section of the Civil Aeronautics Act (section 405 1). If Erie Isles is successful bidder, it will not need a certificate and hearing will not be necessary. It is understood that the route will be advertised early in May. Section 405(1) of the Civil Aeronautics Act states that the experimental air mail bill (Public Law 486, 75th Congress, 3rd session) is not repealed by the Act. This law provides for five airplane star routes on which payment shall not exceed 20¢ per mile.

Canadian Colonial Airways Hearing

Hearing was held Apr. 13-14 on application of Canadian Colonial Airways, Inc., for a certificate of convenience and necessity to operate between Newark and Montreal, and also on application of Canadian Colonial Airways, Ltd. for a foreign air carrier permit between the same points. CAA Examiner George Keyser presided at the hearing. Principal witnesses were Sigmund Janas, president of the American company, and A. E. Low, president of the Canadian corporation. Hamilton O. Hale, who also represents American Airlines, appeared for the applicants, and Edward Sweeney for the CAA.

During the "grandfather" period, equipment was leased from American Airlines and operated by that company's personnel. However, Canadian Colonial is now in the process of acquiring its own personnel to operate the two DC-2's purchased from American. Also, two DC-3's have been ordered. In the past, the Canadian post office has paid for two southbound mail schedules at 50¢ per mile, but a contract is now pending under which payment will be for one round trip daily, according to testimony by A. E. Low.

INTERLOCKING DIRECTORATES

Mark T. McKee, PAA Ask Approval

Application for approval of interlocking directorates involving Mark T. McKee and Pan American Airways was filed with the CAA recently. McKee is a director of Pan American Airways, Inc., Pacific Alaska Airways, Pan American Airways Co. (Del.) and Pan American Airways Co. (Nev.). In addition, he is a director of American Airlines and president and director of Wisconsin & Michigan Steamship Co.

American Airlines' Interlocking Directorate

American Airlines on Apr. 20 asked the CAA to approve Mark T. McKee as a director of the company. McKee is also a director of several companies in the Pan American Airways System and is president and director of Wisconsin & Michigan Steamship Co.

Railway Express Interlocking Directorate

Railway Express Agency has filed application with the CAA for approval of certain interlocking directorates involving Edward J. Engel.

ORDERS, REGULATIONS

CAA Okays Northwest RFC Loan

Order, serial No. 33. The CAA has approved Northwest Airlines application for an RFC loan of \$480,000. Complete story on page 8.

Age Requirement Increased

Regulation, serial No. 9. Amendment 10 to the Civil Air Regulations, increasing the minimum age requirement for a private pilot rating from 16 to 18 yrs.

Pan Am, American Export Agreement Disapproved

Order serial No. 31. The CAA has disapproved an agreement entered into by Pan American Airways, American Export Airlines, Pan American Airways Corp. and American Export Lines concerning division of routes in foreign countries. Complete story on page 8.

Rehearings on CAA Decisions

Amendment No. 1 to the Rules of Practice under Title IV and section 1002(d) and (i) of the Civil Aeronautics Act. "Any party may petition for rehearing, reargument or reconsideration of any final order by the Authority in a proceeding, or for further hearing before decision by the Authority. The matters of record claimed to have been erroneously decided must be specified, and the alleged errors, and the grounds relied upon must be briefly and specifically stated in the petition." Such petition must be filed within 15 days after service of the order sought to be vacated or modified. The petition will not stay the effective date of the final order, unless specifically so ordered by the Authority. The amendment was effective from Apr. 14.

Private Pilot Tests Under CAA Program

Order, serial No. 34. This order provides that notwithstanding any provision of the Civil Air Regulations to the contrary, any student who has satisfactorily completed the courses required in the present special and experimental pilot training program of the CAA, and who is eligible in all respects other than aeronautical experience, may take the exams and tests prescribed in section 20.12 of the CAR for a private pilot rating, provided application is made for such exam to an authorized CAA inspector within 90 days after completion of such courses. The order was necessary because students under the CAA program are taking a 35-hr. course, whereas under the CAR, in order to be eligible to take private pilot tests, applicant must have 43 hrs., including eight hrs. dual and 35 hrs. solo.

Restrictions on Flying Near N. Y. World's Fair

Order, serial No. 35. The CAA has passed a special air traffic rule prohibiting operation of any aircraft within one-half mile of the boundaries of the New York World's Fair, at any altitude, and "under no circumstances allowing any aircraft to be flown within certain designated boundaries and to further provide that all aircraft within a 3-mile radius of the restricted area must maintain a minimum altitude of 1,500 ft. and conform to a counter clockwise circle around the restricted area except those taking off from or landing on an established area." The order was necessary, the CAA said, because there are 550 planes, excluding commercial and military, in a radius of 25 miles of the Fair, and at least 20% of these will be engaged in sightseeing. The order will protect the public, the CAA stated.

Calendar of Hearings

May 2—United Air Lines, Western Air Express, leasing of sleeper equipment at Salt Lake City. Hearing to be held at Carlton Hotel before CAA Examiner F. W. Brown.
May 15—Pan American Airways, Panama Airways (PAA), Uraba, Medellin & Central Airways (PAA), certificates of convenience and necessity.
May 22—Pan American-Grace Airways, certificates of convenience and necessity.

More Braniff Passengers

Passenger revenues on Braniff Airways during Mar. 1939 were 39% greater than Feb. 1939 and 54% better than Mar. 1938, Chas. E. Beard, Oklahoma City, Braniff vice-president, has announced. Revenues during March were the second highest of the line's 10-year history, exceeded only by Oct. 1938.

Clarification

In the report of the National Safety Council awards published in the last issue one sentence referring to bungling of publicity was open to misinterpretation. The sentence in no way referred to the publicity of United Air Lines and TWA, as the sentence inferred, but to the handling of the award publicity as a whole by the National Safety Council. We apologize to the alert and efficient publicity departments of United and TWA for the unintentional reflection.

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Pan Am's Trans-Atlantic Rate and Certificate Hearing Concludes

Bermuda Mail Pay Application Also Heard by CAA at 12-Day Proceeding; Oral Argument Set for May 2

One of the CAA's longest and most significant hearings concerning Pan American Airways' application for a U. S.-Europe certificate of convenience and necessity, establishment of a mail rate for the route, together with determination of adequate mail compensation for Bermuda service, concluded Apr. 22 after meeting for 12 days. Oral argument on controversial points is scheduled for May 2 before CAA members Harlee Branch, G. Grant Mason, Jr., and Oswald Ryan, who were present at the hearing.

Pan Am requests permission to fly from New York City, Boston, Baltimore or Charleston to Great Britain, France and Portugal, and asks the following mail pay: \$2,738,940 for 52 outbound trips per year, \$6.79 per mi. for the second weekly schedule, \$3.65 per mi. for the third and \$2.05 for the fourth. All inbound mail revenue is to be for the account of the carrier. On the Bermuda route, \$2.36 per mi. is asked, in place of the present 1/1000c per lb. rate.

The per-mile trans-Atlantic mail pay requests if granted mean that each year the government will pay Pan Am as follows: \$2,738,940 for one trip per week, \$3,819,444 for two, \$4,389,888 for three, and \$4,711,332 for four. The trans-Atlantic rates are based on what PAA estimates the service will cost without the Bermuda line, and the Bermuda rate was formulated by ascertaining what additional equipment would be necessary to operate the latter service twice-weekly with Sikorskys.

With an Eye to the Future



★ Because air transportation, so far, has crammed fifty successful years of progress into every five, it has developed the "telescopic eye" that sees deep into the future. Whether air transports will be larger, or whether there'll just be more of them depends almost wholly on aviation economics. But one thing is now certain—in fifty years, it will be chiefly the chronic stay-at-homes who will not have seen some part of these United States from the air! And the traveling public will have taken to the air many times faster than it ever changed from one mode of transportation to another before!

AMERICAN AIRLINES Inc.

Route of the Flagships

Juan T. Trippe, president of Pan Am, testified that the company has spent over \$1,500,000 in preparing to operate trans-Atlantic service, and exhibits showed that this amount will be over \$2,000,000 by the end of Apr. 1939. Pan Am asks that these extension and development costs be considered in fixing the mail rate. Included in these costs are survey flights, losses on the Bermuda route, losses on a Boston-Halifax line in 1931, an expired agreement which would have allowed landings in Iceland, and other items. The Iceland rights were purchased from Trans-American Air Lines in 1932 for a total of \$55,000, but expired because PAA never inaugurated service.

Atlantic division losses, including survey flight costs, legal fees, etc., were \$381,730.44 from May 1 to Dec. 31, 1937; \$485,731.21 during 1938 and \$46,639.96 for Jan., 1939. Samuel E. Gates, CAA attorney, in cross-examining John S. Woodbridge, PAA treasurer, revealed that the company has no way of telling exactly what the Bermuda service has cost. Monthly statements to the Post Office have included not only Bermuda expenses, but also all trans-Atlantic development costs, because the Bermuda service provides training for U. S.-Europe flying. Woodbridge said. He added that he does not consider the Bermuda route a commercial operation because of the 1/1000c per lb. mail pay received.

No stops at Bermuda are planned on eastbound flights to Europe over the southern route, according to testimony of Col. J. Carroll Cone. PAA's Atlantic division manager. Approximately 15% of the westbound trips will stop at the island, he said. Gates contended that if all flights over the southern route operated via Bermuda, 586 more round trip passengers per year could be carried, and that, in addition, 2,609 passengers per year could be transported to and from the island in the Boeing 314's, thus eliminating the necessity of operating trips with Sikorskys. Under this set-up, PAA would realize a total net revenue increase of \$1,055,145 annually, according to exhibits prepared by J. Parker Van Zandt, chief of the CAA's foreign economic research section.

Gates also disagreed with Pan Am's contention that 778 persons will be necessary to operate four weekly rd. trips to Europe, or that 646 will be needed for three trips, and 524 for two. Of the 778, a total of 467 would be stationed at North Beach Airport, including 242 mechanics, carpenters, painters, etc. Gates stated that he "definitely challenged" the number of personnel needed, pointing out that there will never be more than three airplanes at North Beach at the same time.

Trippe and Col. Cone, when questioned by Henry J. Friendly, PAA attorney, stated that the company's maintenance base will be left at Baltimore for the present, but will probably be moved to North Beach in 1940. Col. Cone testified that he believed Baltimore to be the better site, calling its harbor the "best on the Atlantic coast." The company wants permission to use both North Beach and Port Washington to serve New York City.

Pan Am's exhibits, prepared by Col. J. C. Roop, comptroller, showed that capital investment on a basis on one, two, three and four round trips per week will be as follows: \$2,737,833, \$4,097,284, \$4,777,784 and \$4,777,784, respectively. CAA exhibits showed that, on the same number of trips, the total investment, including extension and development, would be \$5,362,635, \$7,062,086, \$7,942,586 and \$8,072,586. These figures compare with \$4,677,957 on the trans-Pacific route in 1938, and \$7,962,580 on the same line for a future year. Total costs, including return on investment (10%), of operating one, two, three and four trans-Atlantic trips per wk., is estimated at \$3,230,484, \$4,637,532, \$5,735,376 and \$6,536,376, respectively.

G. H. Grayson, assistant director, International Postal Service, told the CAA that the postage rate to be charged on the Atlantic will probably be 30c per

half-ounce, and added that he has been informed, although not through official channels, that Great Britain will not use its "all-up" Empire scheme of carrying all first class mail by air across the Atlantic. The 30c rate would equal \$12 per lb., he stated, of which Pan Am would get \$9.81, \$1.60 would defray costs at each end of the line, and 59c would go for postal handling. Approximately 2,794,302 lbs. of mail per year will travel eastbound to Europe by air, together with 304,008 lbs. of transit mail (from South America), Grayson said. Pan Am's tentative departure days are not the best for obtaining maximum mail loads, he added.

Other witnesses, besides those mentioned, included Capt. J. E. Whitbeck, air transport engineer for the CAA's bureau of economic regulation; Grover Loening, aeronautical consultant for Chase National Bank, New York; E. P. Thomas, president of the National Foreign Trade Council, and G. H. Pouder, executive vice-president of the Baltimore Association of Commerce. Appearances were entered by S. K. Sullivan, attorney for New York & Bermudian Air Lines, and Thomas A. Knowles, representing Goodyear-Zeppelin and American Zeppelin Air Transport.

1st Round-the-World Express is Effectuated

Two suitcases arrived in Battle Creek, Mich., on Mar. 20 after having circumnavigated the globe in opposite directions entirely by air express just 28 days after their departure. Leaving Battle Creek on Feb. 21, the suitcases traveled as far as Chicago via American Airlines where they separated in opposite directions via the following routing:

Eastern Air Lines between Chicago and Miami; Pan American Airways between Miami and Natal, Brazil; Air France between Natal and Marseilles, France; KLM, Royal Dutch Air Lines, between Marseilles and Bangkok, Siam; Imperial Airways and Air France between Bangkok and Hongkong, China; Pan American between Hongkong and San Francisco; United Air Lines between S. F. and Los Angeles; TWA between L. A. and St. Louis; Chicago and Southern Air Lines between St. L. and Chicago; thence via American to Battle Creek.

Officials of Air Express International Agency, Inc., said these were the first parcels ever to travel completely around the world by air express. It was pointed out that each bag flew 80% of the distance on American-made planes. The suitcases and their contents were used as prizes in an advertising contest conducted by Kellogg Co., food products manufacturers, who sponsor the Howie Wing radio program.

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C & S Stops All St. Louis Star-Times Ads; Disagrees With Editorial Policy

Following publication in the *St. Louis Star-Times* of a "Safety in the Air" editorial shortly after the Boeing 307 crash, D. D. Walker, vice president—sales of Chicago & Southern Air Lines, informed the newspaper's officials that all their C & S advertising was being canceled because "in the past, after each airline accident, the *St. Louis Star-Times* has commented editorially on the fact that aviation is unsafe."

The Mar. 23 editorial, which was the immediate cause of Walker's action, had stated that the crash of a plane like the Boeing 307 "suggests that present orthodox American aircraft design lacks something," and added that every multi-engined plane should have motors which are accessible in flight.

"Each time an airplane disaster occurs, government and airline officials proceed with a critical investigation," the *Star-Times* said. "Occasionally, as with a recent crash on the west coast, they find a pilot guilty of some fantastic human error. But all too often the investigation means, chiefly, meticulous examination of the wreckage, the instruments, the surviving passengers, if any, followed by a report so obviously tentative it is meaningless. For some unexplained reason, it is decided 'a motor failed.' It seems extraordinary, under these circumstances, that aircraft producers have not followed this fact to its logical conclusion—that, since motors apparently will sometimes fail, the safe plane is one which provides better facilities for checking up on the engines during actual flight. Not on the ground, before take-off but in the air."

Referring to the Boeing crash, the editorial said, "Apparently one engine, breaking up while operating at terrific speed, literally tore the left wing off the ship. Would not an engineer, with access to the motors, have discovered evidence of its prospective failure in time to save 10 lives and a half-million-dollar plane? Better think it over, Mr. Airplane Manufacturer."

Commenting editorially on Walker's cancellation of C & S advertising, the *Star-Times* said that it has commented occasionally about aircraft accidents and bad flying practices, such as pulling streamers and stunting above crowds. "In no case, however, has aviation as such, or the aviation industry, been criticized in a destructive way. The few comments on this subject that have appeared in the *Star-Times* were intended to better a good record—not show up a bad one. The *Star-Times* will change its editorial policy on air safety when it believes this policy is incorrect, or when, through continued development of safety measures, an editorial policy advocating air safety measures is no longer necessary.

"The *Star-Times* has no comment to offer on the action of Mr. Walker in canceling all *Star-Times* advertising until this newspaper discontinues its efforts to improve the safety of air

travel. It is his privilege to advertise anywhere he pleases, or not at all if that is his idea of the way to run an airline. It is also the privilege of the *Star-Times* editorial writers to state their views on air safety, regardless of the opinions of persons who apparently feel that open discussion on the subject should not be permitted."

State Legislation

Bills Passed

Kansas—S. B. 289 (Todd): To protect approaches to municipal airports by prohibiting the erection of dangerous obstructions adjacent to such airports. Law permits cities owning airports to obtain easements for aerial safety zones adjacent to airports.

A companion bill introduced in the lower house (Kessler-Nickell) applies to tax exemption on aviation gasoline; simplifies handling of tax exemption returns. Both bills had support of the Kansas State Aviation Ass'n.

Hearing

New Hampshire—H. B. 358: Vigorous opposition to what was termed the "junking" of this bill for the creation of a state aeronautics commission and providing for regulations for aircraft operation in favor of an "inadequate set of amendments," has been voiced by more than 100 persons, "friends of aviation." The protest came on the eve of a scheduled hearing for the amended bill before the appropriations committee. Protests urging substitution of the original bill were drafted for transmission to George W. Boynton, chairman of the appropriations committee.

Resolution

Florida—A resolution introduced by 11 representatives urging the Civil Aeronautics Authority to grant the application of Eastern Air Lines for an extension of its Memphis-Tallahassee route from Jacksonville to Ocala, Orlando, West Palm Beach and Miami and return was to be discussed on the floor of the house. An earlier effort to pass it failed when Rep. Outman urged postponement.

Bill Prepared

Florida—A bill to create the Duval County Air Base Authority has been prepared by J. Henry Blount, Duval County attorney, and will be submitted to the Duval County delegation in the legislature on May 4 for consideration and enactment into law.

Utah Legislation Enacted

Salt Lake City, Apr. 15—The governor has signed S. B. 71 (Williams and Lamoreaux), which provides a new basis for distribution of gasoline tax money derived from sale of fuel for aeronautics purposes. The bill provides that 75% of the revenue shall be allocated back to the airports of origin, and the rest shall go to the state aeronautics commission to meet its expenses and to be used by it in the development of aeronautics.

Air Marking Bulletin

"Air Marking," bulletin No. 12, has been distributed by the CAA, dated Oct. 1, 1938. The 28-page booklet contains 30 illustrations and discusses types of air markers, air marker construction, air marking airports, wind-direction indicators and obstruction marking.

RECORD OF SCHEDULED AIRPORT OPERATIONS

	Week Ended Apr. 8				Week Ended Apr. 15			
	Passengers		Transports		Passengers		Transports	
	In	Out	In	Out	In	Out	In	Out
Burbank	739	742*	...	...	757	790*	...	...
Cleveland	2,077	2,081	246	245	1,698	1,764	212	211
Dallas	941	999	144	150	1,016	930	141	146
San Francisco	61	81	19	19**	75	89	21	21**
	March Report							
	Passengers		Transports		Mail		Express	
	In	Out	In	Out				
Chicago	11,830	11,569	1,300	1,305	290,415	163,864		

* Figures from Union Air Terminal show totals for United, TWA and WAE; include no through passengers and revenue passengers only.
** Construction limits field to small transports.

Col. Gorrell Testifies Before House, Senate Groups on R. R. Bills

Summary of statements on behalf of scheduled air carriers respecting S. 2009 and S. 1660, as well as H. R. 2531 and H. R. 4862, by Col. Edgar S. Gorrell, president, Air Transport Association of America, have been recently made available. Col. Gorrell testified before the Senate Committee on Interstate Commerce on Apr. 6 in connection with the former bills, and before the House Committee on Interstate and Foreign Commerce, Mar. 23, on the latter measures.

"... Some have complained that railroads are more regulated than are their competitors," Col. Gorrell said. "In the case of air carriers, this allegation is baseless, for the Civil Aeronautics Act provides for regulation of all phases of operation, which is actually more extensive and more drastic than that applicable to railroads. As the Interstate Commerce Commission says in its 52nd annual report, the Act provides for air carriers 'a system of regulation which is, if anything more comprehensive than that which has been provided for the railroads.'"

Of the two bills in the House, one (H. R. 2531) is said to be virtually the same as S. 1660 so far as air carriers are concerned, and the other (H. R. 4862) is similar to S. 2009 in its effect on air transport.

Pointing to destructive competition among railroads in their early history, Col. Gorrell said before the Senate group that "air transport, at the very outset of its history, has been subjected to the highest standards of conduct and the strictest regulatory power, for the protection both of competitors and of the public . . ."

"The CAA today in pending mail rate cases, is making the most exhaustive inquiry into passenger and express operations and all of the expenses of the air carriers. Even if S. 2009 were adopted, the CAA would have to continue to make such an inquiry in fixing the rates of mail pay. Yet in the passenger rate case before the ICC that agency would be making the same inquiry. Whose view . . . should prevail?"

Minnesota Proposal Opposed

St. Paul, Apr. 15—Charles Ferraro and John Hallman, both of St. Paul, contend that the present Minnesota law for regulation of flying discourages experimentation in planes and aero engines. Ferraro is the inventor of a motor and Hallman manufactures another. They say national regulation of small planes forbidding their use for paid passenger carrying suffices, and for that reason, they oppose a proposed appropriation of \$14,000 for state regulation.

AA Shows Increase

Revenue passengers carried by American Airlines during the first 24 days of March increased 39.2% over the corresponding period a year ago, Charles A. Rheinstrom, vice-president in charge of sales, announced recently. Every route of the company's system showed an increase in traffic, the figures show.

Air Base Bill Pending

A bill pending before the Porto Rico legislature would turn over to the Navy Department a 300-acre tract in San Juan harbor for an air base. The bill proposes that the navy operate the port allowing military, commercial and civilian use. The site is valued at more than \$5,000,000.

AIR RESERVE ASS'N PUSHING 4 BILLS

Would Provide Compensation for
Death, Disability; Stipulate
Base Pay for Pilots

The Air Reserve Association of the United States, with the help of Congressmen, has been successful in introducing four bills which would provide for compensation for death and disability resulting from inactive status flying and provide 25% of base pay for reserve pilots who maintain prescribed flying requirements on inactive duty status.

Rep. Andrew J. May has introduced H.R.3220 in the House and Sen. Morris Sheppard has introduced a similar bill, S.1021, in the Senate. The bill to provide for 25% base pay has been introduced in the Senate by Sen. M. M. Logan as S.45 and has been introduced in the House by Rep. John J. Sparkman as H.R.3956. The bills have been referred to the committees on military affairs in both branches.

This bill, H.R.3220, "puts the benefits payable under the responsibility of the United States Employees Compensation Commission and the compensation rate there is based on the salary of the individual involved," said Al Near, superintendent of Bowman Field, Louisville, Ky. and national president of the reserve association. "As these air reserve officers draw no pay on inactive duty it would be hard to establish any basis for compensation unless there be a proviso making the basis of settlement be as if the officer had been on active duty at the time of the accident."

"Further, the last paragraph of the bill should be amended to provide that claims arising from accidents prior to the enactment of the act should be covered thereby, although the benefits payable should only be given with the enactment of the bill."

In regard to S.45, Near said, "The expense of going to and from the point where training is taken and the expense involved in maintaining physical standards up to what the Army thinks they should be, such as operations, hospital bills and doctor bills . . . are borne entirely by the reserve officer. . . . It is because of this that we are attempting to pass S.45."

"We are also attempting to create a bill that will protect the security of the reserve officer on extended active duty. These officers are prohibited by the Congress from participating in active duty for over five years, at which time the officer is dumped back into commercial life to try to find his way around. . . . This is a terrific injustice."

Near reports that there are approximately 1,500 active reserve officers, of which over 700 are now in the regular Army on extended active duty basis.

New Detroit School

A school for instrument flight training using a Link trainer and aircraft equipped for instrument flying has been established at Detroit City Airport by H. O. Setter. Mr. Setter is a graduate of the CAA instrument school at Wayne County Airport.

Frank Say Says CAA Inspectors Need Caddies to Carry Air Regulations

Frank Say, one of the best known and most experienced aviation men in the Southwest, unburdened himself of a blast against costly red tape and irritating Civil Air Regulations in a letter to *Southern Flight* which was published in the most recent issue of that publication. Say is with the Booth-Henning Co. at Love Field, Dallas, and has long championed a movement to bring together fixed base operators to battle for common interests.

On the thesis that "the non-scheduled part of the industry is well on the way to being regulated to extinction—or at least decimated—unless we get together," Say wrote that for the first time since the Air Commerce Act of 1926 was adopted has non-scheduled aviation a friend in Washington. He referred to Grove Webster, now chief of the private flying development division. He urges that pilots, mechanics, school operators, fixed base operators, manufacturers, private and corporate airplane owners, all get together to correlate ideas for his guidance.

"If we persist in uttering isolated individual squawks that 'all is haywire' without concerted efforts to better things, we're going to find ourselves running around as the despised illegitimate cousin of the great air transport industry," he said.

"Some 900 pilots and 400 airplanes set the rules for 20,000 pilots, 40,000 student pilots and 10,000 airplanes. And 25 officials in Washington can out-voice Grove Webster. I well know the contributions in design, safety and speed that the transport industry has given the industry, and their organizing into coherent units was for their own preservation, not against us. If we do the same we can accomplish our ends without hurt to them, and with benefit to all."

Say specifically criticized regulations, particularly in the matter of addition or removal of extra equipment.

"After we try to do a good, safe, workmanlike job then we have to make up a Form 18-1 describing what we did, how we did it, how much it weighed, the horizontal arm, etc., and then swear before a notary as to whether we told the truth. Why the notary business on every piece of paper? If we lied about it the inspector would find it out, our customer would find it out, and we would soon be out of business. Besides, the notary fee of four bits—for duplicates. In an average private airplane that four bits represents roughly 30 miles. In the last year I have made nearly 200 of these forms. This means 6,000 miles my customers have paid for—but didn't get."

"If it so happens that the equipment in question is not in the specifications, then it is necessary to make up a weight and balance report, if the data can be obtained, or weigh the airplane and compute new C.G. locations for the empty, noseheavy and tailheavy loaded conditions. Now the specifica-

tions are only sent to the CAA inspectors, and if none happen to be in town then you must spend days, or weeks getting the information necessary to start the job. Then if it should be found necessary to weigh the airplane a CAA inspector must witness the weighing."

"In one instance in Dallas we had to wait nine days for an inspector to witness the weighing—after installing 26 pounds of radio equipment in the conventional location in a 3750-pound airplane. All of this business takes time, delays the owners, and costs money. In the case mentioned above the cost and delay have caused an owner, who used his own airplane for transportation for nine years, to sell his ship and quit. That means a loss to me of a good customer and a loss to the industry of an enthusiastic supporter. This state of affairs is the more pitiable because it is so very useless and unnecessary."

"I think I have a solution to this weight and balance business. When the ship is manufactured it has been weighed and the empty weight and C. G. is known as are the noseheavy and tailheavy C. G. with load. The fore and aft C. G. limits are established by the A.T.C. tests. Note these four items of information on the license and then allow the addition of any kind of equipment anywhere in the airplane so long as the gross weight and the C.G. limits are not exceeded. The CAA inspector can tell if the installation is airworthy or not, so let him judge that."

Say opined that perhaps the inspectors might welcome some method of lightening the load of ponderous tomes they have to carry with them. "One more year like the last and they will have to have caddies to carry their brief (?) cases."

Six Aeronaics To School

Six Aeronaics Scouts recently were put into service at Bendix (N. J.) airport where approximately 30 New York University students are enrolled for the flying course offered by Standard Aviation Co. in connection with the CAA training program. Edward Gorski is manager of Standard. Aeronaics also announced that the first Chief was introduced in Australia recently by its export representative, Aviation Equipment & Export, Inc., and was put into service by Newcastle Aero Club.

Takes Title to Airport

Buffalo, N. Y., Apr. 15—County Treasurer Charles Ulrich has consummated tax foreclosure proceedings on the 43-acre Becker Flying Field and consequently the Erie County government took title to the property which had been owned by Edward J. F. Becker and others. Accumulated unpaid taxes, dating from 1932, amounted to \$23,282. The property is assessed at \$25,000. The field was operated as a flying school. What use the county will make of the field has not been determined.

CAA Studies Charges for ATC, Inspections

Hearings before the House appropriations committee reveal that the Civil Aeronautics Authority has vaguely considered a plan of charging for aircraft inspections and for approved type certificates but Paul J. Frizzell, CAA secretary, reports that serious consideration of such a plan is at least a year away and perhaps never would be feasible.

Two Congressmen, Thomas S. McMillen of South Carolina and Louis Ludlow of Indiana, both Democrats, asked the CAA why it was more necessary for a federal agency to inspect aircraft than it would be necessary to inspect automobiles. Mr. Ludlow asked, "Would it not be a just thing to demand that a wealthy owner of an airplane pay for that service?" and Mr. Frizzell answered as follows:

"I think it is a debatable question. I think the probable reason why Congress has done that is because they recognized that this is an industry which is in its early stages of development, one vitally important to national defense, and Congress has probably felt that they should do everything to encourage it."

Later Rep. J. William Ditter of Pennsylvania asked if a charge was made for the issuance of an approved type certificate and suggested this would be a source of revenue to the government.

Mr. Frizzell's answer was: "I assume that the reason Congress has never authorized such a charge is because it recognizes that this industry is in its early stages of development, an industry the development of which is vital to the national defense, and we assume that Congress felt that they should promote and encourage it by providing those services without charge."

Mr. Frizzell admitted the Authority has considered making various charges but that it would not get around to considering them seriously for a year.

FTC COMPLAINT

AITI Charged With Misrepresentation
In Listing Prominent Executives in Ads

Aero Industries Technical Institute Inc., Los Angeles vocational school for modern aircraft construction and allied fields, is charged, in a complaint issued by the Federal Trade Commission, with misrepresentation in advertising its home study courses. In its advertising literature, the complaint charges, the respondent listed names of 11 prominent executives of aircraft corporations as members of its "Advisory Council" and "Executive Board." Among these are I. I. Sikorsky of United Aircraft Corp.; C. A. Van Dusen, vice president, Consolidated Aircraft Corp.; Jack Frye, president, TWA; John K. Northrop of Northrop Corp. and others.

The complaint alleges that the majority of the persons named as members of the so-called advisory council have rendered little or no assistance to either the executive board or the board of directors of AITI, and have taken little or no part in the management and operation of the company. Twenty days, from Apr. 7, were granted for filing answer.



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LOCKHEED PLANS 4-ENGINED LINER

'Excalibur' Will Be a 13-Ton, 21- to 28-Passenger Ship; Available in '40

Plans for the development of a 13-ton, four-engined medium-sized commercial airliner to be known as the "Excalibur," were announced Apr. 19 by Lockheed Aircraft Corp., Burbank, Cal. Equipped to carry 21 to 28 passengers and a crew of three, the ship will have a top speed of 241 mph., the company stated. Carl B. Squier, Lockheed sales manager, said engineering & design work is "well advanced" and that it is expected the liner will be available for delivery in 1940.

The plane will be of all-metal construction. It will be low-wing in design and will utilize tricycle landing gear, an innovation in Lockheed transports. Designed primarily for use in airline operation, the Excalibur will be powered with four Pratt & Whitney Wasps, producing 600 hp. each for takeoff.

With a full load of 27,500 lbs. (including 1,100 gals. of fuel), the plane will have a top speed of 241 mph., a cruising speed of 220 and a nonstop flying range of more than 2,100 miles. With the installation of additional fuel tanks, Squier said the plane would be able to fly non-stop from California to New York.

Wingspan will be 95 ft., and overall length is given as 74 ft., 2 ins. Cabin will be 28 ft. long and 6 ft., 4 ins. high. Propellers will be Hamilton Standard hydromatic, full feathering. Other figures follow: gross weight, with 21 passengers—27,500 lbs.; takeoff run at sea level—980 ft.; maximum rate of climb with four engines—1,200 ft. per min.; absolute ceiling with four engines—24,000 ft.

This newest Lockheed will incorporate fully retractable tricycle landing gear with a steerable nose wheel, brakes on all three wheels and new improved high-lift wing flaps, Squier said. "Performance of the Lockheed Excalibur at takeoff, under icing conditions and during approaches at low speeds will be considerably improved over that obtainable with present equipment." He indicated that the prototype will be ready for its first flights in the spring of 1940.

Reversible Pitch Prop Introduced by Curtiss

Following developments carried on with the cooperation of the Bureau of Aeronautics of the Navy, Curtiss Propeller Div. of Curtiss-Wright Corp. has announced the introduction of an electrically-operated reversible pitch propeller for use particularly with multi-engined flying boats. Its pitch may be reversed to create a negative thrust, and it is expected to facilitate maneuvering of large four-engined patrol planes or commercial flying boats.

The company has announced that by operating two propellers in reverse pitch and two in normal position, they may be used as brakes to decrease forward motion, to turn sharply within a small space or to back up. Robert L. Earle, general manager of the propeller division, indicated that it also may prove of advantage on large landplanes for reducing landing run.

Increased weight required for accomplishing pitch reversal on the propeller is said to be negligible. Tests have shown that even though air is blown away from the engines instead of toward them, the latter will cool satisfactorily at the power output required for such maneuvering.

Lockheed Announces New 12-Place, Low-Wing Monoplane, Ready in 7 Mos.

Lockheed Aircraft Corp., Burbank, Cal., has announced a new twin-engined 12-passenger low-wing monoplane for air transport operation to be known as the Lockheed Electra 16-E.

The new transport is generally considered to be Lockheed's "answer" to the 16-passenger high-wing Douglas DC-5, although the difference in capacities of the two ships probably will result in two distinct sales fields. The DC-5 will find its market among airlines desiring more passenger seats for main line hauls, while the Lockheed 16-E seems destined to serve as a short haul ship for large airlines operating larger transports on non-stop schedules.

Contrary to earlier indications, the 16-E will be of conventional design and will not utilize a tricycle landing gear which features the Douglas DC-4 and the DC-5. Top speed is expected to be 228 miles per hour and a normal cruising speed 218 miles per hour. Including pilot and co-pilot the 16-E will carry 14 persons.

Engineering details are nearly complete and construction is to begin

shortly. Flight tests are scheduled for November or December.

The company has released the following details of the 16-E's performance:

Maximum speed 8000 ft. 228 mph.
Cruising speed 11,800 ft. 218 mph.
Takeoff run at sea level 860 ft.
Takeoff time 15 seconds.
Landing speed 65 mph.
Rate of climb at sea level 1410 ft. per min.

Absolute ceiling (2 engines) 24,300 ft.
Service ceiling (2 engines) 23,000 ft.
Absolute ceiling (1 engine) 10,000 ft.

Preliminary specifications indicate the plane will weigh 11,500 pounds fully loaded. This includes 200 gallons of fuel which will be normal capacity. Pratt & Whitney 550 hp. Wasp engines and Hamilton constant-speed propellers will be standard equipment. The plane will have a wing spread of 60 feet and will be 45 feet in overall length. Mail and baggage will be carried in compartments in the nose and in each wing. Carl B. Squier, vice-president and sales manager of Lockheed, said the 16-E is primarily a development of the Lockheed Electra which was introduced in 1934 and which is in wide use on airlines of the world.

Air Associates Official Would Equip All Transports With Propeller Brakes

The total cost of equipping every air transport plane in the U. S. with propeller brakes would be less than \$200,000, a sum considerably less than the amount any one accident has cost airlines and their insurance underwriters, it has been pointed out by F. Leroy Hill, president of Air Associates, Inc. His organization manufactures and sells propeller brakes as sole licensees of the Quick propeller brake patents and recently was awarded a contract by the Air Corps for 312 brakes to be installed on Douglas B-18 bombers.

After tests made by the Air Corps at Wright Field, it was found that a brake would stop a propeller's rotation in five seconds while the craft was flying over 150 mph. Mr. Hill has explained that vibration caused by engine faults in flight at high speed can introduce flutter in a wing structure which may result in a structural failure. Ease of installation and servicing of brakes is emphasized.

"The increasing number of engine failures at or shortly after takeoff suggests the necessity and outstanding value of propeller brakes," according to the statement. "The time is now at hand when steps should be taken to require adequate means be provided on every air transport airplane for stopping propellers in as short time as possible, not exceeding five seconds."

In level flight at altitude slightly below absolute ceiling, there is little if any loss in speed when one propeller is braked in high pitch position than when fully feathered at the same power from the remaining engine or engines.

The statement suggests that if officials of the CAA were to assume the responsibility of requiring that propeller brakes be installed where needed, a forward step in safe flying would be realized.

March Aero Exports Reach All-Time High

The value of aeronautic exports from the U. S. in March reached an all-time high of \$8,740,795, an increase of 53% over Mar. 1938, when the value of the trade was recorded at \$5,977,319, according to statistics compiled by the Department of Commerce. Total value of exports for the first three months of the year also was a record, amounting to \$20,405,195, an increase of 42% over the first three months of 1938.

Exports to five countries—United Kingdom, France, the Netherlands Indies, Argentina and Japan—were in excess of \$1,000,000, and these five countries together accounted for 80% of the total exports. Exports to four Latin American countries—Argentina, Peru, Columbia and Brazil—amounted to \$2,607,325, or 13% of the total, as compared with five percent of the total during 1938's first quarter.

In a summary the Commerce Dept. revealed that during the first three months of this year exports of aircraft increased 61% in number and 65% in value as compared with the similar 1938 period. Engines decreased 11% in number while the value increased six per cent; the value of parachutes & parts was 313% greater, while other parts & accessories increased 14%.

Leighton W. Rogers Elected Bellanca V.P.

Leighton W. Rogers, former president of the Aeronautical Chamber of



Rogers

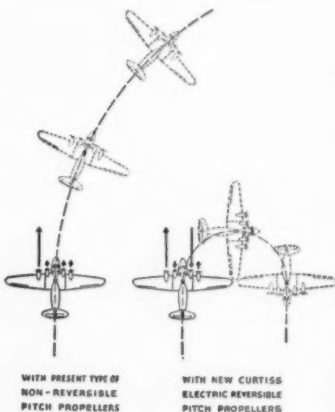
Commerce, has been elected a vice-president of Bellanca Aircraft Corp., according to an announcement on Apr. 24 by G. M. Bellanca, the company's president. Mr. Rogers has been connected with numerous branches of aviation since 1922. As a commercial attaché in Europe for the Department of Commerce, he made surveys of international trade in aeronautical equipment and its use in pioneer airline operations and commercial flying in Europe. His reports on foreign aviation were used by the Inter-Departmental Committee in the preparation of the Air Commerce Act of 1926.

After four years in Europe, Mr. Rogers was brought back by the Commerce Dept. to organize the aeronautics trade division for the purpose of promoting foreign trade in American aviation products. He was chief of that division until 1933, when he left to take charge of the Aeronautical Chamber, handling the manufacturing industry's general promotion, business and trade problems.

2nd Brewster Dividend

Brewster Aeronautical Corp. directors have declared a dividend of 10c a share on capital stock payable May 25, 1939 to stockholders of record May 10. Earlier this year the board ordered a similar distribution, bringing to \$20 the total amount declared in 1939.

Contractors to the United States Army, Navy and Coast Guard and Aircraft Engine Builders.



The diagram shows improved water characteristics of a 4-engined flying boat equipped with a Curtiss electric propeller arranged for reverse pitch control (right) as compared to a boat equipped with conventional propellers (left). Length of arrows indicate the relative amount of power applied to propellers in executing a right turn.

Continental Motors

Gets RFC Extension; Stock Issue to Aid

A registration statement filed with the Securities & Exchange Commission by Continental Motors Corp. reveals that the Reconstruction Finance Corp. on Apr. 5 granted the company an extension on a note in principal amount of \$200,000 which was due June 21, 1939. A loan of \$1,000,000 was granted by the RFC June 21, 1935. Principal now is \$974,950. Payments, as extended, call for return of \$25,000 on June 21, and a similar sum Dec. 21, 1939. Thereafter, semi-annual payments of \$100,000 each will be made on June 21 and Dec. 21 of each year through Dec. 21, 1943, and the balance by Dec. 21, 1944. Company's net loss (consolidated) for four months ended Feb. 28, 1939, was \$207,510.18. The 1938 loss was \$548,286.95.

Estimated net proceeds from sale of the 551,348 shares of \$1-par common, to be offered after May 8, are \$1,345,933, of which approximately \$75,000 will be used to move Detroit operations to the Muskegon, Mich., plant; \$239,426 will go for taxes, and the remainder for working capital and to increase inventories.

The company at present is engaged in development of aircraft engines from 400 to 1000-hp., either of single sleeve valve type or poppet valve type. Two engine test houses will be constructed at Muskegon, at an estimated cost of \$45,000.

In the first nine months of 1938, Continental reports that it sold over 90% of all aircraft engines of 75 hp. or less which were delivered in the U. S. in that period, its sales from that source totaling more than \$360,000. Aircraft engines and parts represented 13.8% of total sales in the fiscal year ending Oct. 31. Net sales for 4 months ended Feb. 28, 1939, were \$2,082,135.58, and for fiscal year ending Oct. 31, totaled \$5,700,409.49.

A contract with Fuel Injection Corp. dated Jan. 3, 1939, grants Continental exclusive right to use and sell fuel injecting devices and parts for aircraft engines of all types and for radial type engines of general application throughout the world. Continental paying a minimum royalty of \$500 a month. In 1937, Wright Aeronautical Corp. acquired from Continental a non-exclusive license on a royalty basis to manufacture and sell single sleeve aeronautical engines for the life of the patents and made a good faith payment of \$37,500.

Agreement with Val Alstyne, Noel & Co. provides for purchase of stock at a price equal to market over a period of time as determined by the last sales price for such shares on the New York Stock Exchange. As of Feb. 28, of 3,000,000 shares authorized, there were outstanding 2,448,652 shares.

Roosevelt Field Election

The following were elected directors of Roosevelt Field, Inc., at the annual meeting of the stockholders on Apr. 17: C. Coburn Darling, Gerald E. Donovan, W. D. Guthrie, Wm. Barclay Harding, Albert P. Loening, Grover Loening, Wm. Dewey Loucks, Seth Low, Wm. B. Scarborough, B. A. Tompkins. Officers elected are W. D. Guthrie, president and treasurer; A. C. Kennedy, vice-president and secretary; Lewis F. Brown, assistant treasurer.

New Douglas Aircraft Directors



Frederick W. Conant,
assistant general manager of Douglas
Aircraft and new director.



William H. Lewis,
comptroller of Douglas Aircraft, newly
elected director.

North American Sets All-Time Production Record for Aircraft

What is believed to be an all-time top aircraft production record is being established by North American Aviation, Inc., Inglewood, Cal., of which J. H. "Dutch" Kindelberger is president.

Production for April was scheduled at 72 planes, and May production is scheduled to be 83. During the current year North American will produce 950 military airplanes excluding a substantial order for spares.

The British order for 400 airplanes will be completed in October and the French order for 200 will be completed in November. Although many of these planes are military trainers, the company is producing large quantities of three-seater observation craft.

Kellett Named Head of Seversky Corp.

W. Wallace Kellett was elected president of Seversky Aircraft Corp. on Apr. 18 at the directors' annual meeting.

Following directors were elected for the coming year: Alexander P. de Seversky, John J. Daly, Mr. Kellett, Paul Moore Livingston Platt, Joseph W. Powell and Horace N. Taylor.

Officials disclosed that stockholders approved proposed changes in the company's capital, announced previously.

National Aviation Elects

F. F. Russell has been elected president of National Aviation Corp. to succeed Edward O. McDonnell who became chairman of the board. S. F. Christy has been elected secretary and asst. treasurer.

Conant and Lewis Elected to Douglas Board of Directors

Election of Frederick W. Conant and William H. Lewis to the board of directors was announced at Santa Monica, Cal., by Donald W. Douglas, president of Douglas Aircraft Co., Inc. Mr. Conant is assistant general manager and Mr. Lewis is comptroller.

"Addition of Mr. Conant and Mr. Lewis to the management of the corporation will give the board of directors a wider scope of experience and point of view, and is in line with the tendency to place key executives in closer touch with the general policies of the company," Mr. Douglas said.

"Ted" Conant, as he is known to friends, in 1914 was graduated from Cornell University as a civil engineer. After serving in the Army during the World War, reaching the rank of captain in 1918, he practiced as a civil engineer & building contractor and five years ago joined the Douglas company where he has held various important positions.

Mr. Lewis is a graduate of the University of Illinois, where he received, in 1919, the degree of bachelor of science. He has been connected with a number of leading accounting firms in the U. S. His experience includes nearly a decade of association with holding companies and large investment trusts. He has been with Douglas since May, 1937.

NA LOSES BOMBER

Wright Field Entrant Crashes; Crew Escapes With Minor Injuries

The experimental attack bomber built by North American Aviation, Inc., for entry in the competitions at Wright Field, Dayton, O., crashed near Wright Field Apr. 11 while undergoing Air Corps tests. The crew of Maj. Younger A. Pitts, First Lieut. George F. McGuire and Second Lieut. James W. Anderson, Jr., escaped without serious injury.

It is understood reliably that there was no structural defect of any kind responsible for the accident and that the Air Corps men had been flying the ship at low altitude and were not familiar with the controls. Insurance and liquidated damage clauses will absorb part of the \$500,000 loss. Out of four attack bombers built for the competition, only two remain, the Stearman and the Glenn L. Martin. A Douglas bomber crashed at Los Angeles some time ago.

New United Director

J. A. Herlihy of Chicago is a newly elected member of United Air Lines board of directors. Mr. Herlihy is vice president of operations for the line. Re-elected directors are Martin C. Anson, Joseph P. Ripley, Niles Trammell, William A. M. Burden, all of New York; Paul M. Godehn, John J. Mitchell, W. A. Patterson, Lester Armour, Mark W. Cresap and R. M. Roloson, Jr., all of Chicago, and Sumner Sewall of Bath, Me.

Boeing Reelections

All members of Boeing Airplane Co.'s board of directors were reelected at the annual meeting in Seattle on Apr. 18. They are: William M. Allen, Harold E. Bowman, Claire L. Egtvedt, P. G. Johnson, Fred P. Laudan, Robert J. Minshall, Paul Pigott, J. Earl Schaefer and Dietrich Schmitz. All officers also were reelected: Mr. Egtvedt, pres.; Mr. Schaefer and James P. Murray, vice-presidents, and Mr. Bowman, secy-treas.

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WORLD'S PREMIER FLIGHTEX FABRIC AIRPLANE FABRIC

Air Track Stock Issue Will Finance Production of New Navigation Aids

Instrument Landing System Developed With Government Aid of More Than \$370,000 Is Ready for Market

Air Track Manufacturing Corp. has filed a registration statement covering 150,000 \$1-par common shares with the Securities & Exchange Commission in preparation for commercial production of its instrument landing system, and development of Sea-Track, a rapid-compensating earth inductor compass which, it is claimed, can be used on any vessel or aircraft. The company also has orders for "several hundred" Stark position finders, a small, inexpensive mechanical aid for flyers.

The issuer, until Feb. 7, 1939, was the Air Track Manufacturing Corp. division of F. L. Jacobs Co., and previously the company was a subsidiary of the W. I. T. (Washington Institute of Technology) Manufacturing Corp. Pursuant to reorganization plan dated Feb. 3, 1938, the Jacobs company acquired all assets and property of W. I. T. Manufacturing Corp., subject to liabilities, which Jacobs agreed to pay.

The 150,000 shares will be sold the public at \$5 a share; 125,000 shares will be for the account of issuer and 25,000 are for account of Jacobs. Probably net proceeds from the 125,000 shares is \$475,571.06, of which approximately \$14,625.60 will be used to reduce current indebtedness and the balance for working capital, including inventories, sales promotion, development and expansion. Proceeds of about \$95,798.34, from the 25,000 shares, will be used to reduce bank indebtedness. Underwriters, Fuller, Rodney & Redmond, New York City, will receive \$1 cash for each share sold to the public, or 50¢ a share on purchases by Jacobs stockholders. Upon completion of sale, there will be outstanding 277,000 shares of the common stock, of which 125,000 will be owned or controlled by F. L. Jacobs Co.

In addition to the products already listed, company expects to manufacture ultra high frequency portable radio range equipment which can be mounted on trucks to constitute "a completely self-contained and powered radio range station—intended to supplement or possibly replace the present radio range beacons." The unit would be especially designed for routes not now marked, for obstacles, or where power is otherwise unavailable.

One Air Track installation is operating at Allegheny County Airport, Pittsburgh, and another unit was delivered to the Civil Aeronautics Authority, Mar. 1, 1939.

It is revealed in the registration statement that the U. S. Navy, in connection with work orders given to predecessors of the issuer, spent \$221,026.23 to help perfect Air Track, while the National Bureau of Standards from 1928 to 1934 made expenditures of about \$150,000. Expenses of Air Track Manufacturing Corp. and its successor, the W. I. T. Corp., on aviation devices from January, 1937, to February, 1938, were \$136,521.22, and as a Division of Jacobs, issuer expended from February, 1938, to February 1, 1939, \$180,499.14. Cost to issuer of re-purchase of foreign and Canadian rights to Air Track, negotiated January, 1939, was \$35,343.56. Upon release of the development from confidential status, the Washington Institute of Technology, which is continuing engineering research on the project, must refund to the government \$100,000 payable at a rate of five per cent of the total contract prices for the use, sale or leasing of commercial blind landing equipment. The Navy also reserves the right to all applications covered by patents for purposes other than in connection with radio landing systems. Issuer is obligated to pay royalties to the Institute

on net selling price and rentals, varying from five per cent to ten per cent, with an annual minimum royalty of \$60,000 payable quarterly.

Sea-Track, issuer states, "removes the one drawback that has made the earth induction compass unfit for boat use and of limited value for airplane use... It returns to a proper reading almost immediately after pitching, rolling, banking, and in jumpy air. Inquiries and orders which the corporation will be unable to fill until the completion of this financing indicate the broad market for Sea-Track."

Officials, all of whom hold the same positions with F. L. Jacobs Co., Detroit, are: Rex C. Jacobs, president, director; Clare S. Jacobs, vice-president, director; E. C. Brendtke, assistant secretary, assistant treasurer, director; C. C. Winningham, secretary, director (in charge of advertising); Dudley H. Waters, treasurer, director; C. J. Farley, director; C. A. Hubbard, director. Sidney F. Mashbir, president of Washington Institute of Technology, also is a vice-president.

Balance sheet of Air Track Manufacturing Corp., based upon assets as of Jan. 31, 1939, taken over upon organization from Jacobs, shows assets of \$776,625.60, and current liabilities of \$16,625.60.

NA PROMOTES TWO

Smithson and Rice Advanced by Kindelberger

J. H. Kindelberger, president of North American Aviation, Inc., Inglewood, Cal., has announced the promotion of J. Stanley Smithson and Raymond H. Rice to the positions of factory manager and chief engineer, respectively.



Smithson

Rice

Smithson has been with North American Aviation since 1934 and has held the positions of project engineer, chief draftsman and production manager. He entered aviation in 1925 with Douglas Aircraft Co. and was project engineer on nine military models for that company. His first work with North American was project engineer on the original O-47 airplane which is now the standard production type for the Air Corps.

Mr. Rice joined the staff in 1935 and has held the position of assistant chief engineer. He started with the materiel division of the Air Corps as a junior engineer and was closely identified with the design of the original materiel division cantilever metal wing and other early metal structure developments. On leaving the division he worked for the Glenn L. Martin Co. of Baltimore until he resigned to join North American. He recently has supervised the engineering work on the NA-40 attack bomber which was entered in the Wright Field competition and which was destroyed by fire after a forced landing during Air Corps tests.

From Boeing to Fairchild
Fred Birch, formerly with the Boeing plant at Vancouver, B. C., is now with the Canadian Fairchild organization.

WEEKLY AVIATION AVERAGES

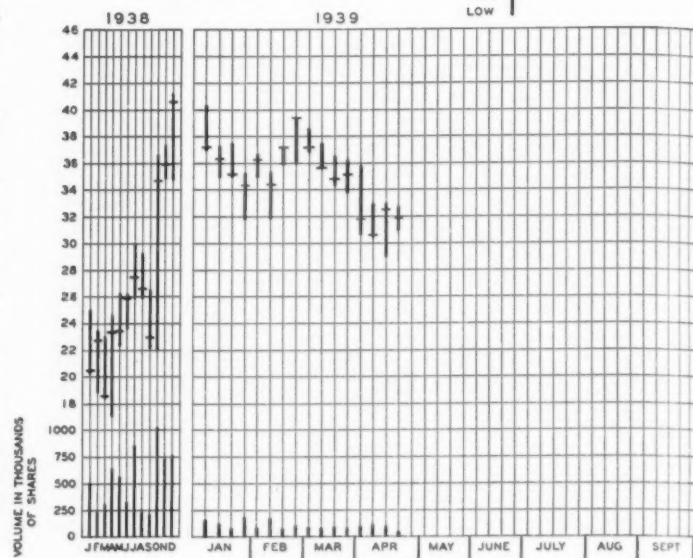


Chart Data Supplied by Wyckoff Associates, Inc.,
Comments by Philip P. Friedlander

An interesting inquiry has come into my hands. Read it.

"Why shouldn't aviation stocks go up in face of the world turmoil? Even if a conflict fails to materialize, greater business and greater profits seem to be the story for the industry. Aviations have advanced five years ahead of schedule, at least! This is truly an example of necessity being the mother of invention."

This analysis, in its essence, is probably correct, but it leaves out of consideration two conflicting forces now in play. First, while a war would mean more business for armament companies, it means also a possible unlimited dumping of American stocks from foreign sources. This threat ever

present acts as a deterrent on possible immediate price improvement.

If there is no war and a settlement is made at a round table, the question then arises, "What effect will disarmament have on aviation securities?"

These factors probably are being reflected in the price of aviation stocks now. The decrease in volume and the new low in the averages to 29.05 represents the uncertainty in the minds of the security owners as to what the future holds in store.

The individual charts of these companies have presented a more optimistic picture than the averages. Up to the present the aviation averages have given us little information to draw definite conclusions.

NEW YORK STOCK EXCHANGE

	Week Ended Apr. 15				Week Ended Apr. 22			
	High	Low	Net Change	Sales	High	Low	Net Change	Sales
Aviation Corp.	5 3/8	4 1/2	+ 1/2	17,800	5 3/8	5	.....	5,700
Bendix Aviation	21 1/8	16 3/8	+ 3 1/4	40,500	20 3/4	19 3/8	— 1 1/2	18,200
Boeing Airplane	22 3/8	19	+ 7 3/8	22,600	22	20 1/8	— 3 3/8	6,900
Consolidated Aircraft	20 1/8	18 1/8	+ 5	15,100	19 1/4	18 1/8	— 5/8	3,300
Continental Motors ..	2 3/8	1 3/8	+ 5/8	27,800	2 3/8	2	— 1/4	6,000
Curtiss-Wright	5 3/8	4 1/2	+ 1/2	59,800	5 3/8	5	— 1/4	9,300
Curtiss-Wright A	23 1/4	19 1/4	+ 17 1/8	16,300	23 1/4	21 1/4	— 2	7,800
Douglas Aircraft	62 3/8	56	+ 23 3/8	20,300	61 3/8	59 1/4	— 2 1/4	8,800
Eastern Air Lines	12 1/2	12 1/4	+ 3/8	7,600	13 1/4	12 3/4	+ 5/8	4,800
Ex-Cell-O	16 3/4	14 1/4	+ 1 3/4	5,800	16 3/4	15 3/4	— 1 1/4	2,500
Glenn L. Martin	34 3/4	30 1/2	+ 2 3/8	52,500	34 1/2	33	+ 1 1/2	15,300
Natl. Aviation Corp. .	9 3/4	7 3/8	+ 1 3/4	5,200	9 1/4	8 3/4	— 5/8	800
N. American Aviation	14 3/4	12 3/8	+ 1 1/8	49,500	14 3/8	13 1/8	— 1 1/8	15,100
Pan American Airways	12 3/4	10 3/4	+ 1 1/2	4,600	12 3/8	11 3/8	— 1 1/2	3,600
Sperry Corp.	40 5/8	36	+ 2 1/8	41,900	40 3/8	38 1/4	+ 3/8	14,000
Thompson Products ..	19 3/4	17	+ 2 3/8	4,300	19	18	— 1 1/8	900
TWA	6 1/8	6 1/4	+ 1/4	7,200	7 3/4	6 3/4	+ 5/8	1,400
United Aircraft	37 1/8	33	+ 1 3/4	43,100	36 3/8	34 3/4	— 1	14,400
United Air Lines	9 3/8	7 1/8	+ 1 1/4	17,600	10 1/8	8 7/8	+ 1 1/2	11,300
Wright Aeronautical	9 3/8	8 5/8	+ 6 1/2	16,000	9 1/2	8 9/8	— 3 1/2	190

NEW YORK CURB EXCHANGE

	Week Ended April 15				Week Ended Apr. 22			
	High	Low	Net Change	Sales	High	Low	Net Change	Sales
Aero Supply B	4	3 1/2	+ 3/8	1,200	4	3 7/8	+ 1/8	300
Air Associates	8	6 3/8	+ 1	400	7 3/4	7 1/2	— 1/2	100
Air Investors	1 1/8	1 3/8	.....	800	1 3/8	1 3/8	.....	100
American Airlines	20 1/2	16 3/4	+ 2 1/2	2,200	20 1/4	19 1/2	— 1/4	400
Aviation & Transp. .	2 3/4	2 1/4	+ 1/2	7,400	2 3/4	2 3/8	— 1/8	700
Beech Aircraft	2 3/4	2 1/4	+ 1/2	11,200	2 3/4	2 1/4	— 1/4	3,600
Bell Aircraft	26 1/2	20 1/2	+ 4	4,200	26 1/2	24 3/4	— 1 1/2	2,400
Bellanca Aircraft	7 1/4	5 3/4	+ 3/4	5,700	7 1/2	7	— 1/2	800
Breeze Corps.	7	6	+ 3/4	4,200	7 1/8	6 1/4	— 5/8	1,400
Brewster Aero	8 3/8	7 3/4	+ 11 1/6	3,700	8 3/4	8 1/4	+ 1/4	2,100
Fairchild Aviation ..	11 7/8	10	+ 1 7/8	6,600	11 3/4	11	— 3/8	1,600
Grumman Aircraft Eng.	16	14 1/4	+ 1 3/4	3,000	15 1/4	14 3/4	— 1/2	500
Irving Air Chute	16 1/8	14 3/8	— 3/4	1,300	16 3/8	16	+ 1	9,100
Lockheed Aircraft	27 3/8	23 3/8	.....	36,000	25 3/8	23 3/8	+ 1 1/4	100
Penn-Central Airlines	6 1/2	6 1/2	+ 3/4	100	7	7	— 1/2	10,000
Seversky Aircraft	3 3/8	3	+ 7/8	8,200	4 1/2	3 1/2	+ 1 1/2	100
Waco Aircraft	4 1/4	4	.....	1,300	4 1/2	4 1/2	+ 1/4	100
Western Air Express ..	3 1/2	2 1/2	+ 3/4	1,100	3 1/4	3 1/4	.....	300

Manufacturers

Developments during the last half of April among aircraft and aircraft accessory manufacturers in the U. S. show the consolidation of two plane manufacturing divisions, the formation of a new company on the west coast, the moving of another company's plant and news that still another firm would build a new plant.

Vought-Sikorsky Consolidation
United Aircraft Corp. announced on Apr. 17 that effective Apr. 1 its two plane manufacturing divisions, Chance Vought Aircraft and Sikorsky Aircraft, had been consolidated into one division, known as Vought-Sikorsky Aircraft. This division now occupies the former Sikorsky factory at Stratford, Conn., which is being enlarged. Rensselaer W. Clark, vice-president of United, is general manager of the new division.

Northrop Organization
Northrop Aircraft, Inc., was formed and has taken option on 20 acres on Long Beach Municipal Airport for the erection of a plant of 100,000 sq. ft. Incorporated early this year, the company is officered by John K. Northrop and LaMotte T. Cohn. Other associates will be Gage Irving and Raymond S. Madison.

Timm To Van Nuys
In anticipation of a production schedule of eight planes a month, starting May 1, Timm Aircraft Corp. has moved from Glendale, Cal. to a new factory of 52,000 sq. ft. floor space at Van Nuys Metropolitan Airport. Timm purchased the plane division of Kinmer Airplane & Motor Corp. from a syndicate. New machinery will cost between \$60,000 and \$70,000. Initial production will be on the Timm 160, a modification of the Kinmer Sport Wing, and will be a two-place, open, low-wing monoplane designed as a trainer. Powerplant will be a 160 hp. Kinmer.

New Chandler Evans Plant
It has been announced that Chandler Evans Corp. of Detroit has purchased five acres at Martin Airport, Meriden, Conn., and soon will construct a new plant there. Carburetors and fuel pumps for aircraft and diesel engines are manufactured by the corporation which is headed by Charles W. Deeds, formerly vice president of United Aircraft Corp.

Douglas Experiments, DC-5 Tests
It was revealed in a report from Douglas Aircraft Co. Inc. to the SEC that the company's following experimental costs were written off in 1938: Portion of amount expended on DC-4, \$643,930; cost to date (Nov. 30, 1938) on experimental military project, \$739,640.41; portion of development costs of type 7A plane, \$50,506.60; revaluation of complete experimental plane, type 2J, \$10,000. The company has completed tests of the DC-5, high-wing transport and has released it to CAA engineers for government testing.

First Vega Ready Soon
News that the first model from the Vega subsidiary of Lockheed Aircraft Corp., Burbank, Cal., would be introduced "within 60 days" was made on Apr. 14. The six-place Menasco unit-wing-engined ship has been termed a "flying automobile."

Vultee Trainer
A basic training ship from Vultee Div., Aviation Manufacturing Corp., Downey, Cal., was prepared for entrance in competition at Wright Field. The craft is said to be smaller and somewhat faster than a comparable model made by North American.

Harlow PJC-2 and PC-5
Tests will start soon for an ATC on the Harlow PJC-1, 145 hp. low-wing, all-metal monoplane with a metal instead of wood prop. With a Warner Super Scarab powerplant, it is hoped that placard cruising speed can be increased to 150 mph., from 135, and that the certificate will be granted for pilot and three passengers, in place of original provisions for pilot and one passenger. New model with these specifications will be the PJC-2. For

military and training purposes, Harlow Aircraft Corp. is developing a two-place model, the PC-5. It will be basically the same as the PJC-1, except that seating will be tandem in an enclosed cockpit. "The fact that the airplane will have substantially all of the control features used in the operation of the larger types of civil and military airplanes is expected to add greatly to its value as a training airplane," the company announced.

Propeller Plant Expansion
McCauley Aviation Corp. at Dayton, O., said to be the only firm in America manufacturing solid steel propellers, is planning a \$250,000 expansion program to increase its annual production capacity from 900 to 5,000 units per year, according to announcement by E. G. McCauley, vice president and general manager. Report says that for the last three years McCauley propellers have been used "exclusively" on Army trainers.

Incorporations

Connecticut—General Aeronautics Corp., Norwalk. Incorporators: John H. Hoffman, Joseph J. Potts, Peter J. Gerillo.

New York—Modern Aircraft, Inc. New York, aircraft; capitalized at \$1,000. Gregory L. Halley, 342 Madison Ave., New York.

New York—Finger Lakes Airways. Auburn. To transport passengers and merchandise by planes and to be a common carrier by air. Directors to serve until the corporation's first meeting are Mary Ann Wadsworth, Syracuse; Mrs. Jean N. Wadsworth, Auburn; Merrill E. Phoenix, Syracuse Airport. Amboy; Augustus C. Haefner, Auburn.

Texas—National Aircraft Corp. San Antonio; airplanes; capital stock, 500,000 shares no par value; incorporators, A. P. Barrett, John B. Miller, David Stratton.

New York—Aircraft Dealers, Inc. Manhattan, aircraft; Snider, Duke & Landis, 26 Liberty St., New York City; \$1,000.

Contracts

During the week ended Apr. 15 the following government agencies reported the following contracts awarded, according to a Department of Labor announcement on Apr. 22:

Bendix Aviation Corp., Bendix Products Div., South Bend, Ind.; Philadelphia Navy Yard; carburetors, \$18,628.25.
Bendix Aviation Corp., Bendix Products Div., South Bend, Ind.; War, Air Corps; tester assembly, carburetor, \$12,931.13.

The War Department announced on Apr. 21 that the following contracts were awarded during the period Apr. 1-15 under the 1939 procurement program of the Air Corps:

Wright Aeronautical Corp., Paterson, N. J., spare parts and exhaust manifold assemblies, \$162,263.66.

Curtiss-Wright Corp., Clifton, N. J., hubs, propellers, boosters, switches and blades, \$94,627.

Pittsburgh Screw & Bolt Corp., Pittsburgh, Pa., hubs, propellers, boosters, switches and blades, \$51,300.

Hayes Industries Inc., Jackson, Mich., wheel and hydraulic brake assemblies, \$44,138.

Bendix Aviation Corp., South Bend, Ind., wheel and hydraulic brake assemblies, \$21,830.

Pioneer Instrument Co. Inc., Bendix, N. J., oxygen regulator assemblies, \$52,325.

Pump Engineering Service Corp., Cleveland, O., vacuum pump assemblies, \$63,675.

Keuffel & Esser Co., Hoboken, N. J., drift meter assemblies, \$129,950.

Walter Kidde & Co., Inc., New York, N. Y., oxygen cylinders, \$61,280.

Air Cruisers Inc., Clifton, N. J., oxygen cylinders, \$34,950.

Navy Contracts Total \$2,695,431

The Navy on Apr. 17 awarded contracts totaling \$2,695,431 for aircraft, engines and accessories. Awards included: United Aircraft Corp., Chance Vought Aircraft Div., East Hartford, Conn., airplanes and parts, \$2,103,800; United Aircraft Corp., Pratt & Whitney Div., engines and spare parts, \$570,964; and Wright Aeronautical Corp., Paterson, N. J., engines, \$20,667.

Aero Patents

114,417: Design for a Low-Wing Cantilever Monoplane. Issued to James G. Taylor and Oscar A. Swanson, Dayton, O., and Roscoe C. Wilson, Fairfield, O., assignors to U. S. government, as represented by the Secretary of War. Term of patent, 7 years.

2,154,489: Vibration Damper. Issued to Richard S. Buck, Wethersfield, Conn., assignor to United Aircraft Corp., East Hartford, Conn.

2,154,532: Propeller Drive for Oppositely Rotating Coaxial Propellers. Issued to Earle A. Ryder, West Hartford, Conn., assignor to United Aircraft Corp., East Hartford, Conn.

2,154,555: Engine Starting Apparatus. Issued to Howard Baer, Jersey City, N. J., and Martin J. Finnegan, New York, N. Y., assignors to Eclipse Aviation Corp., East Orange, N. J.

2,154,572: Motor Control Mechanism. Issued to Raymond P. Lansing, Montclair, N. J., assignor to Eclipse Aviation Corp., East Orange, N. J.

2,154,591: Driving Mechanism. Issued to Charles Raymond Waselge, Ruell-Malmalson, France, assignor to Societe Anonyme Air Equipment, Bellancourt, Seine, France.

2,154,601: Aircraft, and Sustaining Rotors Thereof. Issued to James Allan Jamieson, Bennett, Genista, Newton Mearns, Scotland, assignor, by mesne assignments, to Autogiro Company of America, Willow Grove, Pa.

2,154,861: Driving Mechanism. Issued to Romeo M. Nardone, East Orange, N. J., assignor to Eclipse Aviation Corp., East Orange.

2,154,862: Gas Analysis Apparatus. Issued to Dimitry E. Olshevsky, East Orange, N. J., assignor to Eclipse Aviation Corp., East Orange.

2,154,887: Control Means for Controllable Pitch Propellers. Issued to Paul S. Baker, West Hartford, Conn., assignor to United Aircraft Corp., East Hartford, Conn.

2,154,927: Aerological Instrument. Issued to Constantin P. Yaglou, Boston, Mass.

2,154,984: Self-Folding Strut for Airplane Landing Chassis. Issued to Rene Lucien Levy, Montrouge, France, assignor to Societe d'Inventions Aeronautiques et Mechaniques S. I. A. M., Fribourg, Switzerland.

2,155,074: Parachute Pack with a Single Releasing Hook. Issued to Luigi Avorio, Rome, Italy.

2,155,311: Variable Pitch Propeller. Issued to Percy Horrocks, Hyde Park, N. Y.

(Persons desiring complete copies of patents listed should write to Commissioner of Patents, Department of Commerce, Washington, D. C., specifying serial number. Price is 10c per patent.)

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Herman Named Chief Engineer for Douglas' Santa Monica Division

Fred W. Herman, assistant to Arthur E. Raymond, vice-president in charge of engineering for Douglas Aircraft Co., has been appointed as chief engineer of Douglas' Santa Monica Div. Announcement of the appointment was made by Carl A. Cover, senior vice-president and general manager, and Mr. Raymond, who Mr. Herman has assisted since 1935. Mr. Herman is known especially for his work as project engineer on the original DC-1 and the first DC-2s.

Born in Beloit, Kan., Mr. Herman attended the University of California in Berkeley, left it to serve in the artillery and the Air Corps in the World War, and completed his pilot's training at Kelly Field, Tex. He returned to the university and was graduated with the degree of Mechanical Engineer in 1921. His activities as a government engineer and expert included the working out of the flight test program for the first round-the-world flight. He also was in charge of all engineering for the first flight across the Pacific made from Oakland to Hawaii by Pilots Hegenberger and Maitland in 1927. Mr. Herman joined Douglas in 1930.

With Mr. Herman in charge of all engineering at the main plant and Edward H. Heinemann holding a similar position in the El Segundo Div., Mr. Raymond expects to devote his efforts to general supervision and coordination of all engineering activities, with the title of director of engineering for the entire organization.

Chief Engineer



Fred W. Herman
Newly appointed chief engineer of the Santa Monica Div. of Douglas Aircraft Co.

Orders Top \$30,000,000

Los Angeles County Aircraft factories' military orders for the week Apr. 2-8 for Great Britain, the Netherlands and France topped \$30,000,000 and called for some 830 bombardment and combat craft. It was stated that the French government might buy 50 more planes at a cost of \$5,000,000, and England may build 1,000 North American Harvard NA-16 basic combat ships at the Noorduy Aviation Ltd. plant near Montreal.

Eldred Claims Another Light Seaplane Record

Dewey Eldred of Willoughby, O., landed his Lycoming-powered Taylorcraft seaplane off Fire Island lighthouse near Bay Shore, L. I., N. Y., on Apr. 22 and announced that he had completed a 1,242-mile flight in 16 hrs., 58 min., and 32 seconds, establishing what he believed to be a record for light seaplanes. Average speed was 73 mph.

The flight was timed by William C. Zint, official NAA timer, according to Stanley A. Hedberg, Eldred's representative, and the record claimed is for seaplanes in the 2d class of Federation Aeronautique Internationale for seaplanes having less than 397 cu. in. piston displacement.

Eldred on Jan. 7 flew the same 50-hp. seaplane from Port Washington, L. I., to Daytona Beach, Fla., in 13 hrs., 45 mins., establishing a new international record for light seaplanes. (AMERICAN AVIATION, Feb. 1). In his latest trip he flew continuously over a course between the lighthouse and a point near Amagansett.

Aeronautical Charts

The U. S. Coast and Geodetic Survey, Department of Commerce, Washington, D. C., announces the following new charts which cancel all previous editions. Pilots are warned against using obsolete charts. All sectional aeronautical charts are scaled at 1:500,000 and priced at 40c each, with a discount of 33-1/3% on orders, including assortments, grossing \$10 or more.

New Editions of Sectional Aeronautical Charts

CHATTANOOGA. Mar. 1939. Size, 20 x 45"; relocation of the radio range at Chattanooga.

CHEYENNE. Mar. 1939. Size, 20 x 41"; includes the addition of the radio ranges at Parco, Wyo. and Akron, Colo., and the realignment of the radio range at Laramie.

ELKO. Mar. 1939. Size, 20 x 41"; civil airways and a new radio range at Humboldt added and radio range at Wendover relocated.

RENO. Mar. 1939. Size, 20 x 43"; gives the Humboldt radio range and an accumulation of changes since the last edition.

SEATTLE. Mar. 1939. Size, 20 x 32"; shows realignment of radio ranges at North Dallas and Arlington.

TULSA. Mar. 1939. Size, 20 x 44"; new radio range at Chanute shown and radio range at Tulsa realigned.

TWIN CITIES. Mar. 1939. Size, 20 x 39"; radio ranges at Twin Cities and LaCrosse relocated.

WILLISTON. Mar. 1939. Size, 20 x 37"; includes the addition of radio ranges from Swift Current, Regina, and Broadview, Canada.

New Medical Examiners

During March the following physicians were officially authorized to act as medical examiners for the CAA in the cities named:

Dr. Hugh M. Simmons, 219 W. Walnut St., Willows, Cal.; Dr. Hubert E. Allen, 21 S. 8th St., Richmond, Ind.; Dr. Harry B. Stauffer, 301 Central Trust Bldg., Jefferson, Mo.; Dr. Don Marshall Geisinger Memorial Hospital, Danville, Pa.

The following physicians changed their addresses during the month, their new addresses being as follows:

Dr. W. Marvyn Johnson, 1608 N. 4th St., Monroe, La.; Dr. Richards H. Hoffman, 123 N. Allegheny St., Bellefonte, Pa.

The following named physicians are no longer making examinations for the Authority:

Dr. Francis W. Davison, Danville, Pa.; Dr. James V. Price, Bolivia, South America.

Port Officials Named

Endicott, N. Y.—Kenneth A. Walters, Endicott trustee, has been elected chairman of Tri-Cities Airport commission. He succeeds Joseph Clapham of Binghamton who declined the post. Samuel A. Mauriello and R. W. McPherson were renamed manager and secretary, respectively.

HARLOW GETS \$125,000 ORDER

New Firm Also Sells Canadian Rights to Model PC-5 for \$25,000

The first order received by Harlow Aircraft Co., Alhambra, Cal., successor to Harlow Engineering Corp., is for a net sum of \$125,722.50, for an undisclosed number of planes, according to information filed with the Securities & Exchange Commission. The purchaser is not named. A cash payment of 25% is provided in the contract which was signed Feb. 28. Delivery of the first plane is scheduled for about July 1.

Canadian manufacturing and sales rights to the new 2-seater Harlow plane now in development have been sold to N. J. G. Lynam. The agreement calls for payment of \$25,000 by Lynam (of which \$12,500 already has been paid) for working drawings and construction and delivery of jigs, dies, etc. In addition, Lynam has exclusive option to purchase rights to any other planes developed by Harlow in the next 5 years. Working drawings of the new ship (Model PC-5) have been completed and it is said construction of the prototype may be finished about May 30. The PC-5, to be basically the same as the present PJC-1, was designed for military and training purposes.

Borg-Warner Corp. Purchases Pesco

The Borg-Warner Corp. of Chicago has acquired Pump Engineering Service Corp. of Cleveland and now operates the concern as a subsidiary, according to an announcement by Charles S. Davis, Borg-Warner president. The present organization will continue to operate the business, Mr. Davis said.

Pesco is producing a line of fuel pumps, vacuum pumps, anti-icing pumps, propeller feathering pumps, electrically motor driven units, combination pumps, valves, hydraulic pumps and hydraulic systems and equipment. The company supplies leading plane manufacturers and airlines and the Army and Navy.

"As a Borg-Warner subsidiary, the Cleveland company will be able to continue and expand its engineering and new product development program at its modern plant," the announcement said. Pesco products are manufactured in Great Britain by Plessey Co., Ltd. of Ilford, England.

Rearwin Receives \$30,000

Engine Orders in One Week

Kansas City, Kan., Apr. 16—Rearwin Aircraft Co. at Fairfax Airport last week received orders for engines totaling almost \$30,000, according to Kenneth Rearwin, vice-president and general manager. Culver Aircraft Corp., Columbus, O., ordered 25 90-hp. engines, and another order, totaling \$8,000, was received from the Army Air Corps for the Ken-Royce LeBlond engines built at the Rearwin plant. Rearwin said the new orders would necessitate immediate increase of personnel. Twenty-five men now are employed in the powerplant division, and about 15 additional will be employed, he said.

School List Prepared

A list, by states, of universities and colleges which offer more than three aeronautics courses has been prepared by the Office of Education, Department of Interior. About 65 schools are shown on the list. Another grouping shows magazines used in clubs and classes in high schools, junior colleges, colleges and universities.

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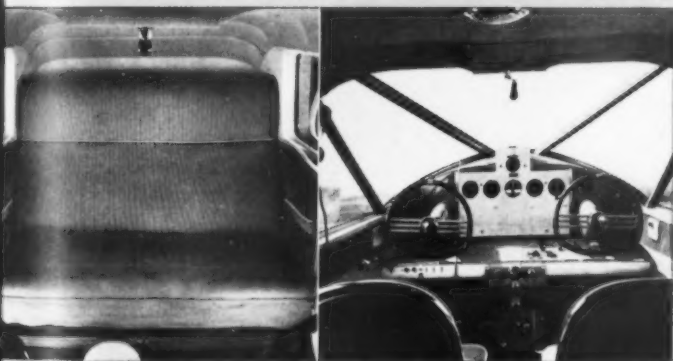
THE STINSON 'RELIANT' ★ THE STINSON "105"



The 'Reliant's' new cowling is sleeker. Stainless steel louvers, name plate, streamlined exhausts with chevron design and attractive striping add style and dash.



Additional streamlining and retractable entrance steps increase the 'Reliant's' speed. Flaps and hydraulic brakes enable the 'Reliant' to land with a roll of only 250 feet.



The 'Reliant's' rear seat is wide enough for 3 persons. Luggage compartments have been enlarged. Note the dignity and good taste of cabin appointments.

Always considered the most beautiful, 'Reliant' interiors have been entirely restyled. See smart new handling of instrument panel—a finer note in airplane adornment.



The Stinson "105" costs only \$2995.00 at Wayne, Michigan. Only \$998.00 down on finance plan. Note decorative stainless steel treatment on grilles and exhausts. *Including Federal taxes, not including state or local taxes.



The "105" is a roomy plane with racy lines; excellent vision on ground and aloft. Flaps, wing slots and hydraulic brakes are safety features.



Comfort for 3 persons in a cabin so distinctively styled that it cannot be matched even in planes costing many thousands of dollars more.

The "105's" 'Jewel Case' indirectly lighted panel harmonizes stainless steel and fine wood finishes, with control wheels and knobs in Fawn toned plastics.

The accepted Stinson 'Reliant' and the beautiful new Stinson "105" differ in price, size and performance. They do not differ in Elegance, Quality and Reliability. Both carry the prestige of the Stinson name. Both are styled in a delightfully refreshing manner which we believe surpasses all other airplanes in this important respect.

For 14 years Stinson 'Reliants' have outsold all other 4 and 5 passenger planes by a vast margin. They are widely used by Businessmen, Sportsmen, State and Governmental Agencies. Airlines, which are best qualified by experience to select the Best airplane, have been almost unanimous in

buying 'Reliants'. Now we offer a newer and finer 'Reliant' retaining all the proven Stinson advantages PLUS 25 new, extra value, features.

The new Stinson "105", for 3 persons, is so luxuriously appointed that its sensationally low price will amaze you. It cruises at 105 miles per hour with 25 mile to the gallon automobile economy. It is equipped with Slots, Flaps, Hydraulic Brakes and other features obtainable heretofore only on planes costing thousands of dollars more.

For Quality, Style, Reliability and Value, insist that your next plane be a Stinson. Write today for Stinson Plan News describing these fine planes.

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